

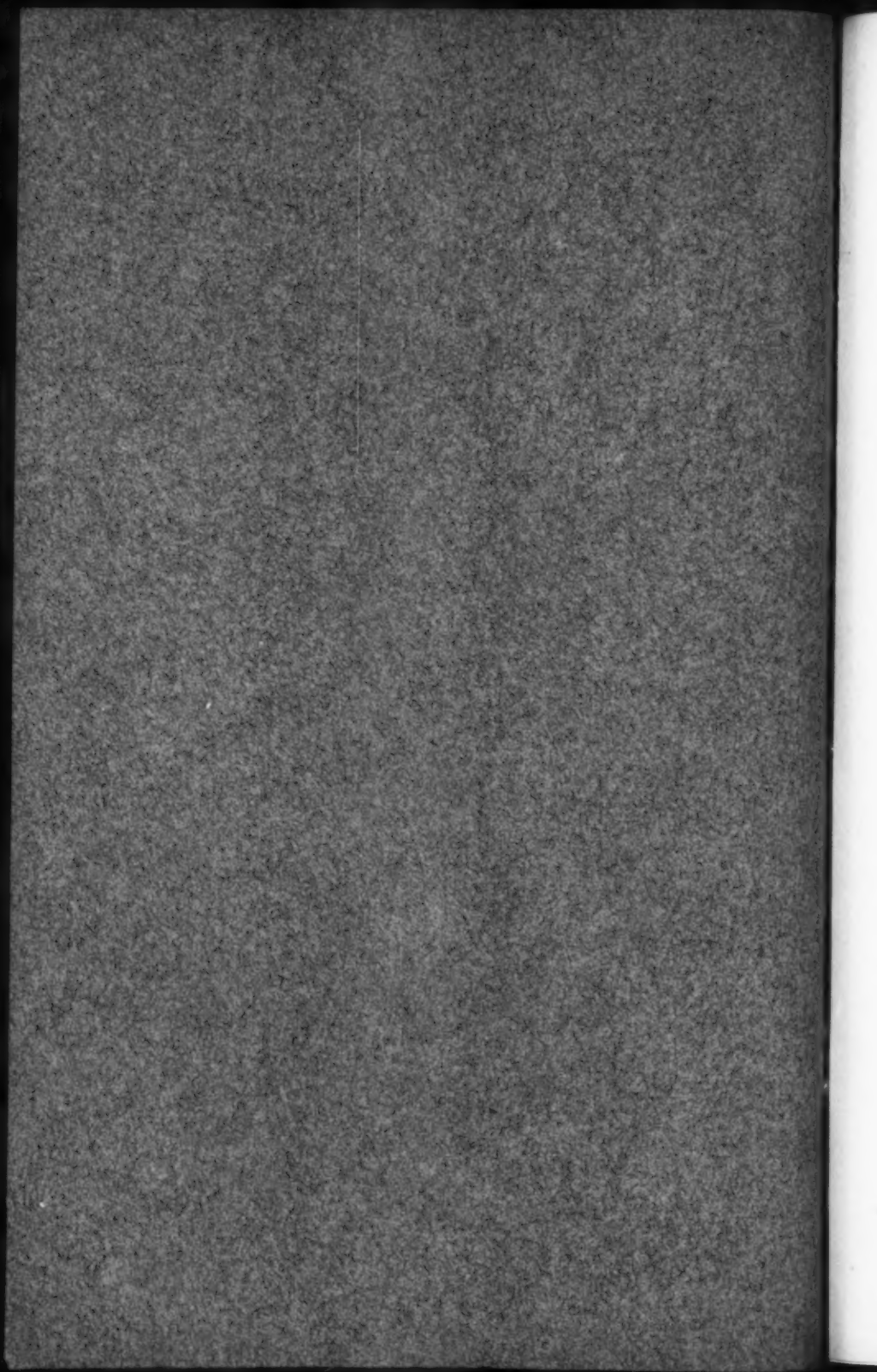
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SIERRA CLUB BULLETIN

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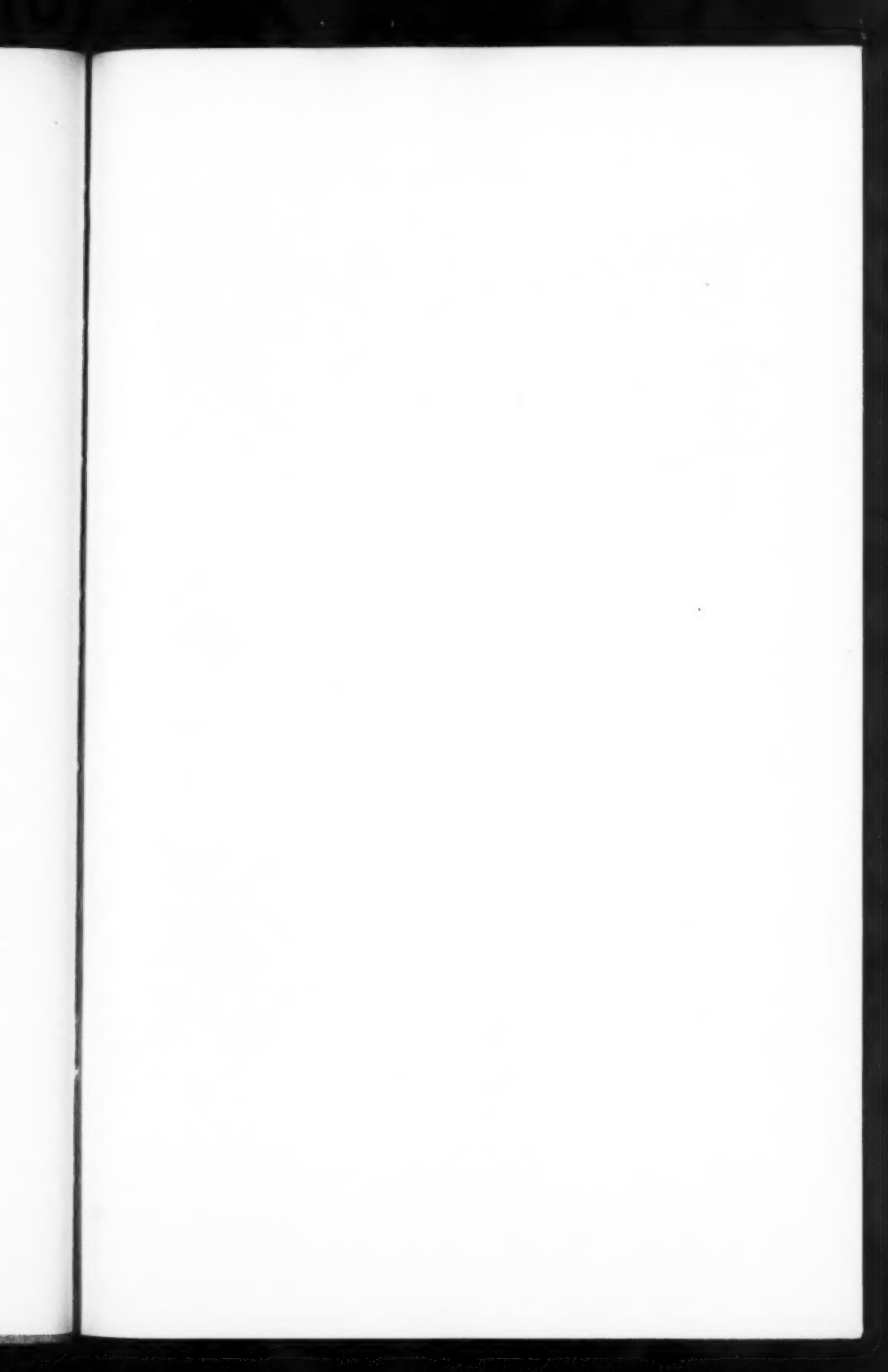
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SIERRA CLUB BULLETIN

VOLUME XVII



NUMBER I

FEBRUARY

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RETROSPECT: NINETEEN-THIRTY-ONE

BY ANSEL EASTON ADAMS



MID-AFTERNOON . . . a brisk wind breathed silver on the willows bordering the Tuolumne and hustled some scattered clouds beyond Kuna Crest. It was the first day of the outing—you were a little tired and dusty, but quite excited in spite of yourself. You were already aware that contact with fundamental earthy things gave a startling perspective on the high-spun unrealities of modern life. No matter how sophisticate you may be, a huge granite mountain cannot be denied—it speaks in silence to the very core of your being. There are some that care not to listen, but the disciples are drawn to the high altars with magnetic certainty, knowing that a great Presence hovers over the ranges. You felt all this the very first day, for you were within the portals of the temple. You were conscious of the jubilant lift of the Cathedral range, of the great choral curves of ruddy Dana, of the processional summits of Kuna Crest. You were aware of Sierra sky and stone, and of the emerald splendor of Sierra forests. Yet, at the beginning of your mountain experience, you were not impatient, for the spirit was gently all about you as some rare incense in a gothic void. Furthermore, you were mindful of the urge of two hundred people toward fulfillment of identical experience—to enter the wilderness and seek, in the primal patterns of nature, a magical union with beauty. The secret of the strength and continuance of the Sierra Club

is the unification of intricate personal differences as the foundation of composite intention and desire.

You were musing thus as you sat in the shadow of Parsons Lodge and watched car after car spin over the meadows, cross the bridge, and cluster about the little rise of land supporting the soda springs. Old friends and initiates clamber out and unfasten tons of dusty luggage. Occasionally a huge green bus hurries along the road like an enormous beetle negotiating a rope. Then trucks of dunnage-bags come lumbering in and disgorge with startling finality. Around to your right rise clouds of smoke and a mist of many sounds—clattering of commissary implements, the hollow toc of well-swung axes, and incisive executive voices compelling the mountain of supplies into efficient order. Dan Tachet is up to his elbows in dough, and broadcasts staccato Gallic commands to his assistants. Francis Tappan is in everything at once, and order blossoms out of chaos.

As the day progressed the fabric of personnel became increasingly familiar—old friends and new friends, and people you never saw before, relieved of the dusty heat of the long foothill drive and eager for the high adventure. Present, of course, was William E. Colby, veteran commander of thirty outings. You knew who he was without inquiry—he carries with him a deep humanity, and the mood of rivers and forests and clean white stone.

The first dinner in camp is a great occasion, especially for the initiates, who receive illustrated instruction in the ethics of our primitive cafeteria. It is then you get your spoon, a sort of *visa* to all subsequent meals. If you lose it, you are in for diplomatic difficulties of no mean degree. The spoon is the insignia of the order; without it you are disfranchised and helpless. It usually reposes between the sock and boot-top, but some are drilled and hang on the bearers' bosoms like medals. Literally, you are born into the Sierra Club with a steel spoon in your mouth.

Following dinner, a general call for camp-fire wood is made, and several groups go off into the forest with husky intention, bringing in before dark a huge pile of gray and golden fuel. On these occasions you are aware of the rich magic of the Sierra dusk; the world flames with consuming fiery light and quickly smoulders to ashes of cold and amethystine gray. As the cool wings of night fold on the mountains the camp-fire eats ravenously into the dark, and you come with the others to sit on log or rock, or stretch out on the earth and give

happy attention to the affairs of the clan. There may be music, a short lecture, and group-singing at the end. You are drawn, as early man was drawn, by the enchantment of dusk and flame to the council-fire, to the beacon in the night. Later, as you gather yourself into your blankets, with camp-fire songs and the distant chiming of stock-bells blending in your ears, the inner reality of encircling mountains and scintillant heavens assumes a new significance and sleep comes on the rare benediction of the night.

The days are replete with adventure; the morning of the first tribal trek is memorable always. You feel a part of an important emigration; there is discipline and precision, but never of military quality. Camp is deftly broken, breakfast consumed, and the day is before you in a blare of light and enthusiasm. You will remember with delight the trail down along the river to Glen Aulin, the expansive meadows, the refined curvatures of granite and cloud, the waters rushing and chanting into the chasm of the Tuolumne. Going down with water by your hand you sense the directional aspect of the landscape in unison with the descending stream, you follow without fatigue the gestures of the cañon-walls toward the sinuous depths of the gorge. A camp in Glen Aulin can be only temporary, even though it be a fair and kindly place, for it edges on the huge depths of the Tuolumne Cañon, and one must not tarry for long in sight of rugged experience. Nevertheless, the afternoon at Glen Aulin gave opportunity for leisurely adjustment to the new world. You will recall Vernon Bailey showing us old marks of bear-claws high on an aspen shaft—and the good swimming, and the comfortable beds on leaf-packed ground.

Our descent through the Tuolumne Cañon to Pate Valley is historic; old-timers will recollect exciting and arduous days with a knapsack in a wild world of stones and snarling brush and raging waters, and now, for the first time as a group, we proceeded down the cañon on a magnificent trail that makes truce with spectacular ruggedness only at the Muir Gorge. There it leaves the river and threads over a buttress of granite, thereafter dropping back steeply to the stream, and winding down under sky-scraper cliffs to Pate Valley, which in itself is only a short tranquil broadening of the Tuolumne Cañon. There was much regret over the unprecedented low water—the Tuolumne held but a fraction of its normal flow, and the Water-wheel Falls were only suggested by feeble jets from glassy cups of

granite. It is a typical modern conceit to demand the maximum dimension and the maximum power in any aspect of the world—whether of men or mountains. It is better to accept the continuous beauty of the things that are, and forget comparisons of effects utterly beyond our control. An Oriental esthete would never question the exquisite charm of those pale threads of water patterned on shining stone. The American mode of appreciation is dominantly theatrical—often oblivious of the subtle beauty in quiet, simple things. One can never assert the superiority of the vast decorations of the Sistine Chapel over some pure experience in line by Picasso, or of torrents swollen by the floods of spring against the quiescent scintillations of an autumn stream.

"These with the rest, one and all, are to me miracles,
The whole referring, yet each distinct and in its place."
(*Miracles*: Walt Whitman.)

You have doubtless experienced certain emotional reactions quite beyond immediate analysis when confronted with relics of prehistoric culture *in situ*. These moods are intensified when the setting of such relics is of stern and rigorous beauty. In Pate Valley you found vast ancient oaks, and hoary granite cliffs blackened by time and sun. Inscribed on the huge rocky walls, in red-brown mineral pigment, are puzzling and fantastic pictographs of indeterminate age. It is rather futile to speculate on the meanings of these inscriptions; suffice it to say they invite an introspective and serious mood. The crude markings enter your consciousness with a quality of sad and remote associations—a frail stirring of racial recollections under the magic of old and inarticulate expression. You project a pathetic fantasy into the primitive isolation of this wild deep valley, and are sobered a little at the thought of aboriginal struggle and final extinction. For the moment you forget mountains and remember men.

Resuming the trail, an early hearty climb of about five thousand feet lifted us out of Pate Valley and of the cañon of Piute Creek as well, and set us on a high, undulating course in the direction of Rodgers Lake. We camped in the little valley just under Neall Lake for two nights, partly to gather strength after our climb out of the Tuolumne, but chiefly to give us time to explore Rodgers Lake and the surrounding hills. The lake is a rather typical Sierra lake, with an intricate verdant shore-line and a background of interesting elevations. The most prominent, Regulation Peak, presents lakeward a

soaring craggy aspect; the summit, however, is an irregular plateau broken with disintegrated granite crags. It is a good point for a literal view of practically all the major peaks of the Yosemite Sierra—you see beyond Tower Peak to the north, and to Banner Peak and Mount Ritter to the south. The glacier of Mount Lyell floats as a pale ship on a sea of desolate granite; the Sierra crest is drawn back and unresponsive in distance. It is a rather futile view—the great peaks are too remote for intimacy and too near for imaginative splendor. But the warm sun and diamond air, and the friendly, fantastic trees alleviate the severity of isolation.

The trail from Neall and Rodgers lakes to Benson Lake presents a new order of beauty. After leaving Rodgers Lake, you were undoubtedly first aware of the formal charm of Volunteer Peak. Throughout the Sierra there are many mountains of this type—pure forms in carven granite of precise and appropriate textures. Their beauty is beyond the limitations of scale. Although relatively small, Volunteer Peak fulfills every requirement of abstract line and perfection of substance, and pivots a region of intricate and impressive topography. Prior to descending the cañon leading down to Benson Lake, we climbed a granite crest that placed us in strategic view of the northern regions of the park. The complexity of contour inspires our imagination; while the aspect, in a material sense, is massive and severe, the mood is of crystalline delicacy. Here we faced the future of our excursion with the greatest enthusiasm, leaning our eagerness on the promise of ever-changing grandeur—the mysteries of curved cañons and half-revealed mountains—the surprise of sudden gardens in chaotic leagues of granite.

Our camp near Benson Lake was set in a refreshing jungle of lodgepole pine and willow, with a sturdy support of red fir. It was distributed over several little islands, interconnected by logs—a thoroughly woodsy environment with immense entrancing detail. Millions upon millions of friendly living things crowd the soil, the edges of pools, the spaces under the leaves, and in the sunny openings of the forest. A hushed and swiftly moving life enters your consciousness as myriad sparklings of light and color and the frail sounds of faery wings. Glorious dragon-flies move as bolts of blue lightning over the waters; mysterious larvæ propel their grotesque courses through the shallows. Iridescent clouds of gnats pulsate in the sun, bees hang on swaying blossoms, and small earthy creatures concern

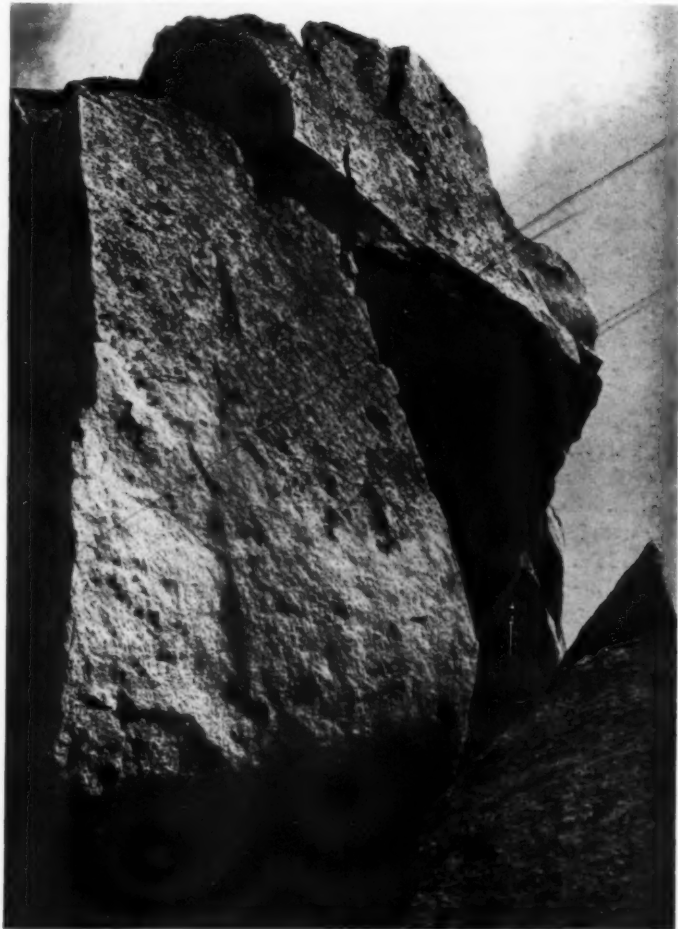
themselves with their problems of existence. You walked for nearly a mile through this luxuriant garden down to the lake. There you found a magnificent beach of clean crisp sand, curved like the new moon around the north shore of the lake, its tips set in stony heights that hold the tarn in a deep embrace. It is a strange and rugged setting—you will agree that the most impressive element is a dark mountain formed as of an ancient sarcophagus on which reclines a huge image reminiscent of the Egyptian figures of the dead, outlined in stone on the endless wall of sky. The remote silence of the soaring peaks, the sad horizon down-cañon to westward, and the endless sleep of the great figure on the mountain waiting for some gesture of eternity . . . you will remember the mood as a rare and mystical experience.

We were at Benson Lake for several days. In the eyes of the purists the club disgraced itself by turning out, almost entirely, on the beach for the greater part of the time—a rather inexplicable situation for a mountaineering organization. But the residue of the faithful tried to atone for their erring brethren—climbs were made to Piute Mountain and Seavey Pass, to Doe Lake, and to other pleasant destinations. A knapsack party of young climbers started for the mysterious northern regions of the park, to join us again in Matterhorn Cañon with new laurels of first ascents to their credit.

Our next move lay in a generally eastern direction—up past lovely Smedberg Lake and over Benson Pass, thence down Wilson Creek to Matterhorn Cañon. It was a rich day, full of the companionship of clouds and shining mountains. The following day found us in Virginia Cañon, and the day thereafter we were again at Soda Springs, bidding two-weekers farewell, greeting new companions, and enjoying an interlude of semi-civilization.

* * *

It is convenient here to mention the important mountaineering that came to pass during the entire outing. While detailed notes will appear in another section of the BULLETIN, I must speak of the principal ascents made by Jules Eichorn and Glen Dawson and their companions. The ascents of Finger Peaks, Sawtooth Ridge, Matterhorn Peak, Echo Ridge, and the traverse of the three highest Minarets were among the most notable achievements. The famous climber, Dr. Underhill, joined us at Garnet Lake, and we were treated to fine exemplifications of the art of rock-climbing. This specific phase of



GRANITE

Photograph by Ansel Easton Adams



CATHEDRAL PEAK
A Telephoto View from Soda Springs Camp Photograph by Nathan C. Clark

mountaineering is a most important and refreshing sport, and young Dawson and Eichorn promise to carry out the tradition of European standards, and with their new art succeed to the laurels of Charlie Michael, Norman Clyde, and the heroes of earlier days.

Rock-climbing, as such, should be accepted with the greatest enthusiasm; yet I feel that certain values should be preserved in our contact with the mountains. While it is rarely a case of the complete ascendancy of acrobatics over esthetics, we should bear in mind that the mountains are more to us than a mere proving-ground of strength and alert skill. Rock-climbing should be considered a thrilling means to a more important end. Just what the end and aim of our appreciation of the mountains are, is an elaborate metaphysical equation, the solution of which is implied most clearly in these words of Whitman—

“... while the great thoughts of space and eternity fill me
I will measure myself by them.”

The artist in man seeks ever to venture new phases of beauty; the wilderness will reveal the profound significance of life to him who approaches it without sentimentality or the possessive attitude. While vulnerable to material defacement, the mountains are beyond the exploitations of the baser spirit, yet ever captive to the imagination and the living dream.

* * *

After an orgy of fresh fruit and hot baths the second two weeks section of the trip began. You felt the tension of great expectancy; the revised route was to take you through new and rugged regions, climaxing at the Ritter range—the Olympus of the central Sierra. During the first part of the outing we had followed more modest elevations and had given ourselves to roost in cañons and by quiet lakes; now you were to know the virile tang of high tarns and plateaus—and the clean brilliance of the summit of the range.

A crisp and early-morning start found us before midday on the Tuolumne Pass. This pass cuts through the Cathedral range, and all around you cluster striking sculptures of granite. To the south lifts the Merced range, a long line of high tumultuous stone, curving eastward to join the main crest of the Sierra. After an hour or so of moderate descent we were in camp near Babcock Lake at the base of a shapely cone of granite that heads the sharp fall of the cañon of Fletcher Creek. In the evening we walked out on the trail overlook-

ing the Merced Valley, and sat for long under a gracious moon. The sense of detachment that comes upon you in the presence of moon-illuminated mountains augments the reality of experience. Space becomes intimate; the world of fixed dimensions fades into patterns of exquisite delicacy, and you mingle your being with the eternal quietude of stone.

Our trip to the plateau overlooking Washburn Lake and the upper Merced Cañon was uneventful. Camp was made on the stream that flows from the south shoulder of Mount Florence: it was undoubtedly the first occasion upon which the quiet of this little basin had been broken by such a swarm of humanity. It could have fared worse—our group seems never to intrude on the spirit of the wilderness, for we know our contact is ephemeral and our gains not material. From this camp, the ascent of Mount Florence was made by several large parties, and Mount Maclure and a small crest south of Electra Peak were attacked as well. The ascent of Mount Florence is without intense adventure, but never tedious. We follow up the little water-course through timber-line meadows and plateaus, emerging after a mile or so on the huge talus-slopes of the mountain, which fold upward with increasing steepness to the crest. On the north, Mount Florence breaks into perpendicular cliffs, and forms the principal enclosure of a high glacial valley. From the basin of the Maclure Fork the mountain possesses a massive and imposing form, and there is a wealth of little lakes clustering near it. Mount Florence is one of my first mountains, and I shall always remember the spectacular aspect of Lyell seen through storm-clouds from the cool lichened rocks of its summit.

One of the objects of our encampment in this region was to acquaint the club with a hitherto unfamiliar section of the Yosemite Park—the upper basin of the Merced River. The main stream of the Merced heads in the great horseshoe of peaks comprising the Lyell group and the Merced range; the principal tributary is the Lyell Fork, whose cañon remains for me, after many years of Sierra experience, one of the supremely exquisite regions of the range. A short mile above the crossing of the Isberg Trail the valley widens into intimate and tranquil meadows, from which are seen, eastward, some satisfying peaks. You will recall one startling tower of greenish black stone, banded with veins of brighter rock that dart over the dark crag like bolts of lightning. Above the meadows lifts a thousand-foot shelf concealing

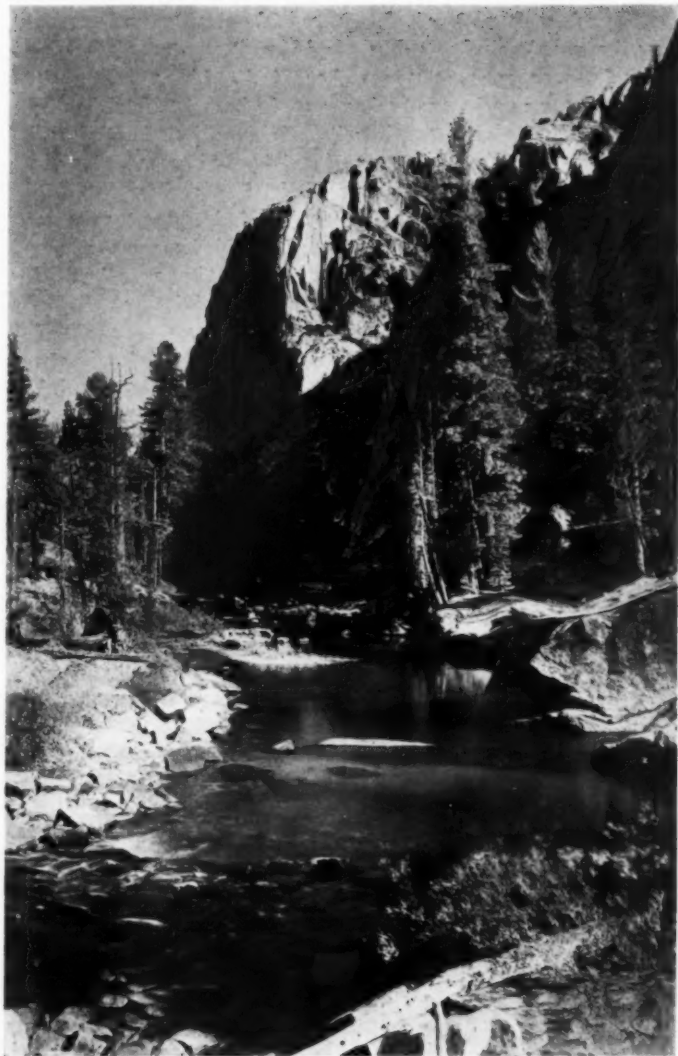
the first of a multitude of lakes. Continuing from there the valley turns steeply to the north, and leads, with ever-increasing grandeur, to the south base of Lyell. You will remember our way through this wild and intricate world of stone under impressive mountains, circling cold and steel-hued lakes. Standing under the battlements of Rodgers Peak, you observed that the curve of the valley had completely enclosed you in huge desolation; you were aware of the mood of a new and austere world. Here is all the sadness and beauty of stone—immense domes and ridges of matchless form, dark-crested summits, spires and crags and turrets beyond numbering. And towering above all, the huge precipice of Lyell leans on the northern sky.

While at this camp on the plateau we held our camp-fires on the spectacular brink of the Merced Cañon; the intense environment and the profound influence on us all of the revealed majesty of mountains will never be forgotten. Clustering about us were gnarled and ancient junipers, clinging with heroic courage to the immense cliffs. In the depths below, the Merced River assembled its tributaries and widened into the irregular oval of Washburn Lake. Across the chasm rose complicated precipices supporting the continuation of the plateau, and beyond, against the sky, towered a new aspect of the Merced range, overpowering in height and proximity and commanding contour. It was here we experienced a memorable evening of music which attained the quality of an earnest ceremonial. At dusk we gathered at the rim of the world and watched the last fires of sun-flare on the summits, and the valleys fill with cool rivers of night. Stone and hoary trees and the bodies of our companions merged in translucent unity with the world of mountain and sky; our fire leaped and writhed into the night, and clouds of querulous sparks soared high among the stars. A spirit of unearthly beauty moved in the darkness and spoke in terms of song and the frail music of violins. You were aware of the almost mystic peace that came over us all; the faces of those about us reflected the experience of calm revelation. There was the face of the great scientist dreaming of a beauty beyond all formula—the face of the artist gazing with unseeing eyes into the abyss of stone, yet seeing an infinitude of things—the face of the man of affairs, quiet and eager, confronted with new and exquisite experience—the face of adolescence, hushed and surprised at this promise of the world's sharp beauty. At the close of the music we went quietly through the darkness to our beds,

swaying and twinkling our lights among the trees and listening to the choir of golden bells from our animals at pasture.

We moved the next morning to the base of Vogelsang Pass, camping at the head of a long meadow on a branch of the Maclure Fork. Above us were some lovely lakes where we fished and lingered during the afternoon. On the day following we made the long march over Vogelsang and Ireland passes to the Lyell base camp. Some of the more ambitious of our group made a successful cross-country route up the Maclure Fork and over a series of ridges in the vicinity of Parsons and Simmons peaks, a shorter but exceedingly rugged and interesting excursion. The condition of Mount Lyell was unfavorable this season for an official climb, especially as there were so many novices among us. Accordingly, we stopped at the Lyell base camp for but one night, continuing next day over Donohue Pass to our camp at Garnet Lake. It is a magnificent trip from Lyell Base to Garnet Lake; we are given extensive views of the eastern aspect of the range and the colorful desert regions of Owens Valley. After crossing Rush Creek we skirted Thousand Island Lake, with the regal beauty of Banner Peak before us, and soon found ourselves on the indented rocky shores of Garnet Lake, where we camped for four glorious days. From here we climbed Mount Ritter and Banner Peak, and explored the basin of Shadow Creek and the environs of San Joaquin Mountain. Our general mountaineering adventures were carefully organized under capable leaders (a most important procedure when enthusiastic and inexperienced tyros are involved), and many were enabled to enjoy for the first time the thrills of major ascents.

Here we were favored with vigorous days of storm that augmented the severe grandeur of the peaks; sky and mountains were unified in patterns of dynamic splendor. You will remember an inspiring exploration that led us into the intimate regions west of Mount Ritter. All the early morning the sky was thronged with cloud and a sharp wind beat upon the crags. Before noon an eager arm of cloud clutched at the sun, and a sigh of shadow came over the mountains. Rippling patterns of wind flashed on turquoise waters—ice-fields became cold gray as the moon before dawn. It was good to feel the tiny flagellations of the rain—it was good to be buffeted by cool and fragrant air. And one must ever bow before the deep benediction of thunder. We sat for long under a rocky shelter while the storm



TUOLUMNE RIVER AT GLEN AULIN
Photograph by Herbert P. Rankin



BEACH AT THE HEAD OF BENSON LAKE
Photograph by Ansel Easton Adams

moved over the pass and roared down-cañon to westward. High summits were veiled in the massive clouds that swirled and blended above us. Clustering on the frontiers of the forest were pale shafts of long-dead trees, poised in final quietness, enduring thunder and the lash of rain. . . .

Our last wilderness camp was at Alger Lake, 10,500 feet above the sea. From Garnet Lake we retraced the trail to Thousand Island Lake, thence followed a general easterly direction to Agnew Pass. There we felt the air and mood of the desert ranges, and passed under intensely colored cliffs of volcanic origin. Again crossing Rush Creek we climbed to Gem Pass, where we gained a grand view of Mount Ritter and Banner Peak—their summits soared into the sky as two huge horns, crossed and interlocked. After a mile or so of gently rising and falling trail we came to Alger Lake, and scattered our camp over a large area of sparse timber-line forest. The lake lies in a setting of stern and barren mountains—flaming heights of vari-colored rock. Emerald areas of pasture creep on the immense ruddy flanks, and ghostly limbs of albicaulis glimmer with static golden fire on the cold stone. At this last wilderness camp-fire we acknowledged the efforts and services of our personnel, especially commending the leadership of Francis Tappaan, who executed his difficult task with admirable precision and judgment. We may well look to him for the security and development of our outing institution; under the training of William E. Colby he has proven himself worthy of the toga of command.

As a mountaineering group our final salute to the Sierra was the crossing of Koip Pass, 12,400 feet high, one of the loftiest passes of the range. From the gentle curve of Parker Pass an uneventful trail to the Tioga Road delivered us in the end to civilization, and our great experience became a memory:

"Pure luminous color fighting the silent shadows to the last."

ANIMAL FRIENDS OF THE HIGH SIERRA

BY VERNON BAILEY,

CHIEF FIELD NATURALIST OF THE U. S. BIOLOGICAL SURVEY

THE 1931 outing of the Sierra Club covered some one hundred and fifty miles along the middle section of the High Sierra from Matterhorn Peak, Benson Lake, and Pate Valley on the north to Washburn and Garnet lakes on the south. The greater part of the trip was in the eastern edge of Yosemite National Park, with a swing over the line into the Sierra and Mono national forests, then back over Parker Pass into the park and down to Tuolumne Meadows where the trip had started. Except for brief trips into Yosemite Valley at 4000 feet above sea-level and Pate Valley at 4500 feet, the camps were from 8000 to 10,000 feet up in the mountains.

To the meeting-place at Soda Springs in Tuolumne Meadows we gathered from east and west. Up from the irrigated valleys of Nevada with their Lower Sonoran Zone kangaroo rats, antelope squirrels, black-tailed jack-rabbits, and long-eared bats, my little party of eight drove past beautiful Mono Lake, up Leevining Cañon, over Tioga Pass at 10,000 feet, and down to 8600 feet at Soda Springs, where, on July 11th, we met the rest of the party, most of whom had come in from the west. With over two hundred people, innumerable automobiles, and over a hundred pack and saddle animals scattered about, much of the wild life around camp kept out of sight, although there were exceptions. In the early morning several deer wandered through camp on their way from the cold damp meadows back to the warmer slopes above. They were mostly does, returning to nurse their spotted fawns left hidden among the trees and rocks. During the day many of our party reported almost stepping on these dappled babies, so perfectly concealed by their protective coloring. One fawn was found in the midst of the bachelor section of camp between two granite boulders in a hollow chosen for a sleeping spot by one of the young men. It was evidently but a few hours old as the navel cord had not yet dried. It was picked up before it made any effort to escape, and I came quickly to its rescue so it should not be frightened. After holding it gently for a few minutes, I slowly opened my arms

and let it walk away without fear to a nearby slope where it again settled down to await its mother's return. After dark she would follow its track or call softly to it and lead it away to a place of safety, little realizing that the safest place of all was close to our camp.

On the whole trip deer were fairly common and were seen by some of the party every day. Their tracks, however, gave the best index to the numbers and kinds; dainty fawn tracks, slender doe tracks, and the wider prints of heavy-hoofed old bucks. More does and fawns than bucks were seen around our camps, for most of the old bucks, their antlers velvet-covered at this season, were up near timberline. One old fellow at 11,000 feet elevation near the head of the Maclure Fork of the Merced, jumped from under a white-barked pine, the last outpost of timberline, where he had been staying for weeks, if not all summer. The soft earth under the sheltering branches was pawed into many beds and the ground behind the tree was trampled like a barnyard. Evidently he had not been disturbed all summer and was loath to leave his bed until we stepped on the big rock just over his head; then, bounding out of the dense cover, he turned quickly down the slope to shelter.

Lower down the mountains and especially in Yosemite Valley the deer were even more common and so tame as to scarcely notice us along the roads or trails. A dozen bucks and does in the old Camp Curry orchard were eating apples so busily that they paid no attention to us when we stopped to watch them. All of those seen in the mountains were in the red summer-coat, but in Yosemite Valley, on August 8th, most of the red color was being replaced by the gray fall-coats. Velvet still clung to the horns of the bucks, however, and the fawns were still faintly spotted.

All of the deer seen close enough for identification were typical California mule deer, *Odocoileus hemionus californicus*, with the narrow black or dusky line down the top of the tail and with the white rump-patch smaller than in the Rocky Mountain mule deer. All evidence points to a fully stocked deer-range in and around Yosemite Park, the sexes well balanced and no scarcity of the best deer food. The value of a great protected area such as this as a game and wild-life sanctuary, not only for California, but for the whole nation, cannot be overestimated.

Conies were generally common in the slide rocks up near timber-

line, and even down well into the trees where there were especially favorable rock-slides. At Benson Lake a couple living in a mass of rock broken off from the cliff above were found low down in Canadian Zone, but generally they live well up in Hudsonian and Arctic Alpine zones. Their little bleat, or squeak, or nasal "eamp," was often heard from the rocks and occasionally one of these little gray round-eared tailless rock-rabbits would be seen sitting motionless on a gray granite slab watching us with keen unwinking eyes. They are the "little haymakers" of John Muir, and this particular subspecies has since been named *Ochotona schisticeps muiri*, in his honor. Their haymaking season had just begun on the first of August at Garnet Lake and they were busy gathering all the little plants, grasses and sedges and stacking them under sheltering rocks to cure for winter food. No better, or brighter, or greener hay was ever put in the barn of a good farmer, for it dries in the shade and is perfectly cured. The conies are never very numerous, as even in their rocky strongholds they are hunted for food by weasels and martens. Away from their rock castles they could not exist.

Every day at our Tuolumne camp brought reports of a big animal with a puffy white tail that looked like a rabbit. Found in the open meadows, grassy parks, or sometimes on the almost barren pebbly slopes above timberline, it jumped out of the grass at one's feet and went bounding away. It reminded one of a deer or antelope, except that it was too small. Few of the party had ever seen the big white-tailed jack-rabbit of the Sierra, *Lepus townsendi sierrae*, found only in the open country up near timberline and sometimes higher. It is light gray at this season, but in winter it is snowy white, with big hairy feet like the smaller snowshoe rabbits farther north. It can skim over the snowdrifts in comfort and safety much as do its relatives, the polar hares, in the far north. Twice red foxes were seen chasing them, but that was only good fun for the rabbits.

Before we left our first camp we had made the acquaintance of the black and brown bears. One came to camp, but found too many people around and departed. An old brown bear was seen at Dog Lake, and her tracks with those of two cubs were seen on the muddy shore of "Puppy Lake," just below. At the Lodge, above our camp in Tuolumne Meadows, a number of bears came regularly for the garbage, and were generally respectful and well-behaved like those in Yosemite Valley. Hotel bears are less exciting than real woods



POLEMONIUM
Photograph by Ansel Easton Adams



WEATHERED ROCKS ON RAGGED PEAK
Photograph by Nathan C. Clark

bears, however, and tracks of many of the latter were seen along our trails farther from the auto roads and haunts of man. An old bear and two yearling cubs were scared out of our Benson Lake campground, but, though seen several times thereafter and their tracks noted along the trails, they kept a respectful distance from camp. Tracks were seen at most of our camps, and a few glimpses were caught of these real wild bears.

On the white trunks of aspens big enough to be climbed, old marks were found. Every claw-mark leaves a permanent black scar that grows increasingly conspicuous. Some of the scars we saw must have been made from ten to thirty years ago, possibly more, although the aspen is not a long-lived tree. Some were merely hand-over-hand prints of young bears going up the trees; some were larger tracks of old bears; some showed the rough marks of dull claws that had slipped and slashed and torn the bark in long streaks. Deep gashes made by bears climbing in a hurry, making long strides, suggested a grizzly bear in pursuit. The long-clawed grizzlies cannot climb trees, while the blacks are often forced to climb for their lives. The grizzlies, however, have been gone for many years in this region.

Near Rodgers Lake the bears had been digging in the beds of mountain heather and had turned over yards of the rich mellow earth. Digging further in these beds I found several small truffles which proved to be *Elaphomyces granulatus*, not known to be edible, but evidently very attractive to the bears. Good bear-food was scarce and much green vegetation was being eaten. A few red elderberries served as dessert, and fat ground-squirrels and woodchucks were dug out and eaten to some extent. Ants, beetles, and other insects furnished some food, but this was the lean time of year. Later, the acorns lower down would afford abundance of food.

Coyotes serenaded our first night's camp at Tuolumne Meadows, and every night thereafter, as well as at most of our other camps. Their tracks were seen every day on the trails, and on two occasions the animals were seen by members of the party. One was reported crossing Koip Glacier at 12,000 feet. Their tracks showed them following the trails over most of the high passes. Their droppings, made up of hair and bones of mice, rabbits, ground-squirrels, and deer, showed the nature of their food. At this season (July-August) ground-squirrels seem to predominate in their diet, but when these den up in late August more venison is required all through the winter.

We enjoyed hearing the coyotes at night, but half as many would have been just as enjoyable and would have required only half as many spotted fawns to satisfy their hungry families. The range is overstocked with coyotes, which, with six or seven young a year, increase much faster than do the deer and mountain-sheep, with only one or two young. The few coyotes seen alive, the one specimen in the Yosemite museum, and the large tracks, all indicate the big mountain form of coyote, *Canis latrans lestes*, named the "killer" from his predilection for deer and because he is strong enough to pull down any deer, mountain-sheep or antelope he can catch. There is some evidence that he is the ruling factor in the present absence of the Sierra bighorn from the crest of the range where it was once so common. There are other factors, but they are probably now less potent than this one.

Sierra red foxes with big furry white-tipped tails were found in Tuolumne Meadows, where a family of this year's young, living in a rock slide of granite blocks, were seen by several members of the party. Their tracks were observed on many of the trails near timberline and even over the top of Koip Pass at 12,400 feet. Their musky odor was occasionally recognized. Their droppings, chiefly of mouse hair and bones, were found up to 12,000 feet, but in winter they probably go lower for larger game. The small scattered coveys of Sierra blue grouse may have suffered from these sly hunters, but in moderate numbers they are a valuable and interesting form of wild life and not very destructive except to small rodents.

The gray fox of Upper Sonoran Zone was found only in Pate and Yosemite valleys and on the chaparral slopes lower still. They are sturdy little foxes with black tips and crests to their tails, and if they cannot run as fast as the coyotes or red foxes, they are skillful at tree-climbing or hiding in the rocks, and so maintain a considerable abundance in spite of a fair price on their skins and their unpopular taste for poultry and game birds. Like the coyotes, they hold their own, and always will, by sheer cunning, adaptability, and rapid reproduction. We need not worry about their future.

Mountain-lions (cougars, or panthers) were not too numerous where we traveled, and only in three places were tracks found. Signs of an old one and some young were reported from well up on the head of the north fork of Conness Creek; signs of another individual were found on Vogelsang Pass, and a half-eaten deer carcass was seen on

the Maclure Fork of the Merced. In present numbers they will not draw heavily on the deer herds, but, with no enemies and four young a year, as compared to deer, with only one or two young, the lions will bear watching. Fifty deer would be a small annual allowance for one mountain lion.

Not a bobcat track was seen on the whole circuit, because we were mainly above the zonal range of these sly hunters of the yellow pine and chaparral belts. Some bobcat pelts were seen at trappers' camps below the Yosemite Valley.

Of the smaller fur-bearers, such as mink, marten, otter, and weasels, only the last were seen on the trip. They were described almost daily by some members of the party, especially by those who fished along streams. Many were also seen out in the big meadows, in the woods, and among rocks, sometimes chasing Belding ground-squirrels or chipmunks, but more often just watching curiously to see what these strange large two-legged animals were doing. Only one was secured for a specimen, found dead in Alger Lake. Apparently typical of the others we had seen, it was the mountain weasel, *Mustela arizonensis*. No trace of the rare little mouse weasel, *Mustela muricus*, was found. There is a skull of a very small river otter from Babcock Lake in the Yosemite museum, but most of the mink and otter keep to the lower valley country.

Not the least of our animal interests was the badger, whose big burrows were seen in every meadow or on fertile slopes where the Belding ground-squirrels lived, and these areas were many. In Tuolumne Meadows badgers were seen almost daily, and a few were seen near Thousand Island Lake and in other appropriate places along the way. Their principal occupation was digging out and devouring the fat ground-squirrels, or occasionally varying their diet with pocket gophers and mice. With their long claws, short legs, and powerful muscles they are regular burrowing engines and have no trouble in unearthing any animal smaller than themselves. They even dig out the squirrels long after these have hibernated, and continue their excavations until the ground freezes hard. Then they dig their own burrows below frost line and go to bed for the rest of the winter. Here in the high mountains they can do little mischief and can do considerable good in keeping the smaller animal life well adjusted. Outside the park the high price on their beautiful winter coats threatens their very existence.

Unmistakable signs of marten were seen in the big rock-slide at 9800 feet, just below the foot of Lyell Glacier, where they had been hunting and eating conies. The Park Naturalist told me of their frequent occurrence about Lake Tenaya and showed me a specimen that had been taken away from a golden eagle. Norman Clyde told me of several taken by fur trappers around Mount Whitney during the winter of 1930-31. The very high price on the coats of these beautiful animals has greatly reduced their original range and threatens their extermination outside the national parks.

The bright-eyed ringtails do not range higher than the rims of Yosemite Valley, but are common about Glacier Point, where they have been captured and photographed. They are great hunters of such small game as mice and rats and other nocturnal rodents, and have been tamed and kept as house pets in place of cats. They are very gentle, beautiful and intelligent.

Of the many small mammals, the gnawers or rodents are the most numerous and the most in evidence. The big silver-gray squirrels down in the valley were scarce this year and few were seen. Many had died, supposedly from mange distributed by cats and dogs, and even the bright little chickarees of Canadian Zone forests were scarce. The fat little Belding ground-squirrels, however, were legion, with large families, rapidly consuming grass, seeds and succulent vegetation for their store of winter fat. Their burrows and trails were seen all over the meadows, and often a dozen or more of the smooth, plain dark gray and brown-backed "picket pins" standing straight up in the grass could be seen at one look. Their sharp birdlike whistle was frequently heard and often attributed to some feathered friend. A few caught in tin-can traps were so scared that we soon let them go; but with patient care they should make good pets. Their principal use seems to be as food for the carnivores, such as bear, coyotes, foxes, badgers, and weasels. The golden-mantle ground-squirrel, with broad black side stripes and orange-colored head and shoulders, is often called a big chipmunk, but is a real ground-squirrel with the burrowing habits of the group. While relatively scarce, a few were seen at most of our camps, generally sitting thoughtfully on rocks or logs or running for burrows.

The chipmunks with their striped backs and bushy tails were abundant at every camp, and, while they comprised several species, they were to most of us just chipmunks. The little alpine chipmunks,

Eutamias alpinus, were our constant companions at all of the camps above 9000 feet, always friendly and fearless, coming into our midst for crumbs or any choice bits of food and often stopping but a few feet distant to stuff their cheeks full of the ripening seeds of grasses or other plants. The smallest, richest colored, quickest and brightest of their tribe, they soon get to be the most friendly.

A full-grown flying-squirrel was taken from the stomach of a rattlesnake below Glen Aulin, so freshly swallowed that it would have made a good specimen except for the head where part of the hair had been removed by the digestive fluids. How a diurnal reptile of the Upper Sonoran Zone could have captured a nocturnal mammal of the Transition Zone is puzzling. However, it occurred at about 6000 feet, halfway between the two zones, and both animals had apparently overstepped their proper ranges and habits. Flying squirrels were heard at night at our camps at Benson Lake and Babcock Lake, and they are probably common throughout the heavy timber of the middle mountain slopes. So rarely seen that few people know what they look like, they are among our most interesting and highly specialized rodents; not real flyers, but very skillful gliders on widespread membranes. Steering with the broad flat tail, they slide down hill on the air fifty or a hundred feet from one tree to another, then run up the trunk and glide to the next tree, alighting with a soft pat of the feet against the bark, always lower than their jumping-off place.

No real beavers come up so high into the mountains, but a few colonies of the so-called mountain beaver, *Aplodontia rufa californica*, occur on the west slope of the Sierra Nevada. We found their fresh burrows and runways and freshly-cut food plants on a branch of Piute Creek along the trail from Pate Valley to Rodgers Lake at about 7500 feet. They are also reported along both sides of the rim of Yosemite Valley and near Tenaya Lake. They exist in scattered colonies, a relic of an ancient and primitive type of rodent, resembling a bobtailed muskrat, but really more like the pocket gophers in structure and habits.

Pocket gophers live in great numbers in the meadows and in every open piece of rich, mellow soil from the valley bottoms to far above timberline. There are many species in the Sierra, but only one mountain form, *Thomomys monticola*, a small buffy-yellow gopher, was encountered above Pate and Yosemite valleys. Thousands of

gopher hills were seen over the mountain meadows, little low mounds of fresh earth lying on the grass, but with no open burrow mouth in the neighborhood. These mounds are just the loose earth thrown out along the underground tunnels, but always with the opening packed tight full of earth when the digging is finished. Abundant as they are, probably not a gopher was seen by any of the party except a few that I caught for specimens to make sure of the species. For ages they have plowed these mountain meadows and buried the vegetation, improving and enriching the soil, doing no especial harm up here in the mountains. Down in the valleys other larger species of gophers are so destructive to crops and fruit trees as to cause heavy losses to the farmers.

Not a porcupine was seen on the whole trip by any of the party, although plenty of trees showed old scars where the bark had been gnawed off in big patches three to ten years ago. Two fresh gnawings were seen, near Babcock and Washburn lakes, respectively, but no porcupines could be found. We were disappointed because a few of these strange animals add much interest to mountain life. Only a few are desirable, however, as any great numbers are very destructive to the trees.

Even the mice—deer mice, meadow mice, and jumping mice—were interesting. Some were caught for closer examination, but not detained long. They make good pets, but were too much of a care for long days on the trail and we did not try to bring any home.

Bats were seen at several intervals; big hoary bats at Matterhorn Cañon, July 21st, and again at our Bernice Lake camp, at the head of the Maclure Fork of the Merced, on July 30th. Some big brown bats were recognized on the wing, but the smaller species could only be guessed at.

A few little shrews were taken in mouse-traps to show their long sharp noses and tiny eyes, but we did not undertake to tame them.

To some the animal life may have seemed scarce, but to those first over the trail or those who wandered frequently from the trail it seemed fairly abundant. Tracks and other fresh signs also indicated a reasonable number of most forms. The tameness of many spoke well for friendly protection and human interest. The grizzly bear and the mountain-sheep were missing, but the sheep can be brought back and, if our best intelligence is used, every species of indigenous mammal can be permanently maintained in any desired abundance.

A FEW BIRDS OF THE HIGH SIERRA*

IN the high mountains of the Greater Yosemite the season of bird song and nesting was well along when our trip began on July 11th, and well over when we left the park on August 8th, but many of the birds were common, nesting and singing for a part of the time. About a hundred species were listed, but no specimens were collected, and many of the obscure forms and young birds were not identified subspecifically and were not noted. There were, however, enough of the common kinds for general interest, and when we were not making too much noise there were often bird songs to be heard about camp and along the trails.

Much to my surprise a few beautiful adult California gulls were found on each of the many small lakes near timberline. They, of course, were just visitors from the large breeding colony on Mono Lake at the eastern base of the mountains. They may have been attracted by the abundance of pollywogs in some of the lakes, or, as we were, just by the crisp air and glorious freedom of the high country. Whether resting on the rocks, floating on the water, or hovering on wide wings, they added grace and beauty to every picture of these mountain mirrors.

Small families of Sierra blue grouse were found in many places along the way, nearly up to timberline, generally among the denser vegetation on the ground, or, when startled, roaring up into the scrubby tree tops. There was usually a ragged old female with two or three half grown young together, small remnants of larger families that had been the prey of numerous enemies.

The beautiful mountain quail or plumed partridge, largest and finest of our American quail, were seen several times below Benson Lake where they spend the summer in Transition Zone. They are too gentle and edible ever to become numerous, and are able to persist in only a few dense covers of natural protection far from hunting areas.

Sierra rosy finches were found on all the higher peaks and over the passes that run above timberline. They are not rare, but always afford a thrill, for they breed in the most inaccessible cliffs among permanent ice and snow, and few of their nests have ever been found or seen by human eyes. When my niece, Miss Laura Mills, came into

* The birds of the Yosemite region have been so fully treated by Grinnell and Storer in their "Animal Life in the Yosemite" (University of California Press, 1924) that only a few of the more interesting notes from our trip need be added.

camp one night well after dark from climbing Pettit Peak, and said she had found a rosy-finch nest where it could be easily reached and seen, I could hardly believe it possible. The next day, July 19th, we returned to the place, some 600 feet above the east end of Rodgers Lake and on a level with the little nameless lake that we at once named "Leucosticte Lake."

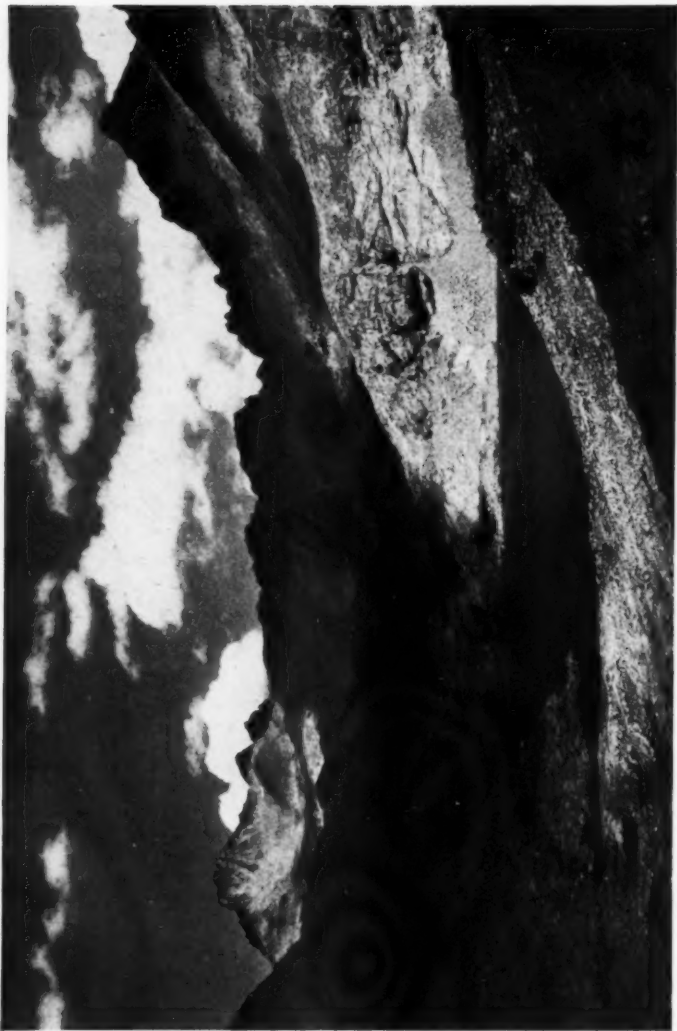
The nest was about six feet from the base of a narrow chimney or cleft that dropped from the north face of the peak. Here, at 10,000 feet, on a cold slope, there were snowbanks on both sides. By piling up a few rocks we could look right into the nest and see the three young birds. There was also one addled egg, which was salvaged and kept for a specimen. The nest was made of coarse sticks and roots and turf, well matted in thick walls and lined with soft grass fibers and placed on a little shelf back in the half darkness of the crack. It was well planned to withstand cold weather and rough storms, but not so sheltered as most of the nests are. On the cliff above we saw dozens of the birds carrying nesting material or food into cracks and caverns that were mostly inaccessible, and always out of sight. These were all above the snowbanks at the base of the cliff, but the birds often came down to the snowbanks to feed or drink, and were carrying food and nest material from the heather beds below. Several hours were spent in photographing and studying the nest and in watching the old birds as they brought food at frequent intervals to the young. The mother bird did most of the feeding and at times brooded the young, but the male also brought food and did his best to try to draw us away from the nest. His beautiful pink plumage certainly attracted our attention when he came near. On all of the high peaks visited rosy finches were common, and later they were found feeding full-grown young along the trails over Vogelsang, Donahue, Gem, and Parker passes.

Another common but unfamiliar bird along the way was the Townsend's solitaire, a thrush-like bird with a wonderful song and one of the rare spirits of the mountains. A few were seen—one at Rodgers Lake, others on Lyell Fork of the Merced, and several along Maclure Fork. On the trail between Maclure Fork and our camp on the plateau above Washburn Lake a nest of the solitaire was found close to the cold rushing water of a little stream. It was under the sheltering edge of a great boulder and just above a bed of mountain heather. Two nearly full-grown young, still in the nest



PLATE VIII.

MOUNT LYEEL AND MOUNT MACLEURE AND THEIR GLACIERS
Telephoto View from Mount Dana Photograph by Ansel Easton Adams



MOUNT LVELL AND RODGERS PEAK
Upper Basin of the Lyell Fork of the Merced Photograph by Ansel Easton Adams

when found on July 27th, were being fed by both old birds, even while we were photographing them. Two days later they were gone. The nest, made of coarse sticks and stems and roots in a depression of the ground, was well matted together and with little trace of the soft lining that it may have had at an earlier date. Another nest, which I did not see, was found on Maclure Fork the same day by Miss Emily Smith.

Kingfishers enlivened many of the streams and were cordially greeted even by their human rivals. Of the woodpecker tribe, hairy and downies and red-shafted flickers were common all along; a few Arctic three-toed woodpeckers and Williamson's sapsuckers were noted, and one Lewis's woodpecker was found eating red elderberries near Rush Creek on August 5th. A few whippoorwills whistled to us in the evenings and an occasional nighthawk was seen in daytime. Hummingbirds were often seen around the flowers as we passed along the trails. They were apparently mostly the rufous and calliope, though the many females and immature could not be surely identified on the wing.

The olive-sided flycatcher called from the tips of tall spruces at Benson Lake and at many other camps. The western wood pewee was a familiar trail companion. A few little flycatchers could not be identified, but may have been any of the five species listed by Grinnell and Storer. Blue-fronted jays were scarce in the forest and about camp. Clark nutcrackers were much in evidence as they lit in the tree tops close to camp. They were generally found feeding on the seeds of the white-barked pines, around the timberline lakes, but were occasionally found catching grasshoppers out in the meadows or picking up scraps around old camp sites.

Western meadowlarks were still singing in the high meadows. A few flocks of Brewer's blackbirds came to our camp in Tuolumne Meadows. An old female and two full-grown young California pine grosbeaks, all in the gray plumage, were feeding beside the trail above Benson Lake on July 19th. The young were fluttering their wings and begging food of the mother-bird, but the casual observer would not notice any difference in their appearance.

Flocks of evening grosbeaks, feeding on ripe cascara berries in the bottom of Yosemite Valley on August 8th, were so tame that they paid no attention to me only a few feet away. Some of the old males were in beautiful plumage of yellow and black and white. Cassin's

finches were common and generally distributed throughout the trip. Many were still singing around our camps up to the last of July and a few even later. The sharp clicking note of Bendire's crossbill was often heard from the tree tops, and a pair of the old birds were feeding full-grown young in the trees near the head of Rafferty Creek on July 26th. Warblers, swallows, sparrows, chickadees, and nuthatches were common, and a few eagles, hawks, and owls added interest along the way.

MY FIRST TRIP IN THE HIGH SIERRA

BY EMMET RIXFORD



HOW vivid are the impressions of one's first tramp in the mountains! The smell of the pines, the beauty of the hanging meadows, the serenity of the great trees, the brilliance of the stars seen through the tree-tops, the intense quiet of the heights, and that greatest of thrills, the exhilaration of reaching the top of some giant peak. Oh, the wonder of it all!

It was in the summer of 1886—it seems but yesterday—that John H. Gray, Jr., and I, members of the University of California Class of '87, with no knowledge of woodcraft, with no very definite idea of where we were going, almost without maps, took a quantity of provisions, blankets, and a few kitchen utensils, and set out for the mountains. We went by steamer to Stockton, thence by rail to Valley Springs and by stage to San Andreas. There we hoped to purchase a burro. Mrs. Washburn, a kindly white-haired lady, permitted us to camp in the lot below her house while we scoured the country in search of a jack. We walked to Mokelumne Hill, for we were told that a band of donkeys were wont to take possession of the plaza in the afternoon just before dusk and bray in chorus. The people of San Andreas called them the "Mokelumne Hill brass band"; but on this day the "band" did not appear. When we got back to camp in San Andreas, we found that Mrs. Washburn's cow had played havoc with our provisions—had eaten up the pineapple cheese, and had slobbered over everything trying to lick up the scattered flour. After some days an old Mexican brought us a splendid young animal; but, bargain as we might, he would take no less than twenty dollars for him. We got an old pack-saddle, and for kyaks used two coal-sacks. The pack was covered with a canvas, but at best it was not particularly shipshape, and it caused much amused comment from people we met.

From San Andreas we walked to Sheep Ranch Mine, where we had our first experience going down a mine shaft, and that in the ore-bucket, our guide standing on the rim. How tiny the thread

which let us down the oblique shaft, the bucket sliding on skids! How like a star gleamed the diminishing mouth of the shaft as we looked upward! Suddenly the shaft changed its angle, and we were instantly in absolute darkness. At the 900-foot level we were shown the workings of the mine, the drifts and stopes. For miles about the mine the roads were terribly cut up by the heavy teams hauling timber for the mine. In places the red dust was a foot thick.

We learned of a short cut over Anderson Mountain, but reaching the top at dusk, and being uncertain as to the direction of our trail, we camped for the night, tethered the jack, and regaled ourselves on cold corned beef and crackers. A can of tomatoes did well for drink. The jack went hungry, except for a handful of crackers. Starting early the next morning, we gave him a good meal of somebody's hay when we stopped for breakfast.

We spent a day in the Calaveras Grove and learned the story of the felling of the first big tree to be thrown down. With a long three-inch auger a row of holes was bored through the stump, first in one direction, then at right angles; the tree then being toppled over by wedges driven in on one side. We heard, too, the story of the Frenchman who had the imagination to smooth off a streak across the stump with adze and plane, and then, having made a ribbon extending from pith to bark, by pasting strips of note-paper together, to check off the rings with a sharpened lead-pencil. In 1887 this first record of its kind was on file in the Museum of the University of California, in South Hall. I suppose it is still there—a record of California's rainfall for nearly two thousand years.

We dropped down to Murphys and visited the cave, which we entered through a simple trap-door in the hill. There we saw the exquisitely banded sheets of lime crystal, which would ring almost in a tune when gently stroked. They had already begun to be smoked up by candles, and I suppose that by this time they are of the usual dull gray of most limestone caves.

My shoes gave out; so from Murphys I telegraphed my father to send me at Yosemite a new pair of stout shoes. Good generous man that he was, he sent a pair of number tens, "hunter's size," as he said, "and hoped they would be large enough." Even with two pairs of socks on, my feet slid around in them. For a few days they did well enough, but soon they turned up at the toes, and it was agony to walk in them.



PLATE X.

RODGERS PEAK FROM THE NORTH
Photograph by Axel Easton Adams

SIERRA CLUB BULLETIN, VOL. XVII.

PLATE XI.



MOUNT RITTER FROM ELECTRA PEAK
Photograph by Ansel Easton Adams

We had a swim in the Stanislaus, which we crossed by ferry, and then passed through Columbia and Sonora. Crossing the Tuolumne River at Ward's Ferry bridge, we presently reached First and Second Garotte, the former now called Groveland, where we met the Big Oak Flat Road to Yosemite.

At the toll-gate at Colfax, on the South Fork of the Tuolumne, we left the road and made for Hog Ranch by way of an old ridge-road, which gave us some superb views to the north, and dropped down the nine miles of trail into Hetch Hetchy, establishing camp beside a spring near the foot of the trail at the edge of the meadow. Presently an old Indian squaw, who was out catching grasshoppers for dinner, made us a call. With a white willow stick from which the bark had been removed, she would strike a grasshopper and put him in a fold of the gunny-sack which she used as a loin-cloth. She showed us nearly a pint of grasshoppers. She had on no other dress than this gunny-sack. She was a friendly old soul, begged matches and salt. These we supplied her rather liberally, for we were pleased to have her smile, showing her almost toothless gums, and point to the waterfall, calling it "Hetch Hetchy."

After the first few days of our tramp we found that we could trust the burro to stay with us at night without tether, and felt particularly secure when camping at the edge of the beautiful Hetch Hetchy meadow with grass knee-high. But Mr. Burro was not pleased. He quietly went back over the trail in the night. Thus we learned that burros prefer dry food and know that it is warmer on hillsides out of the draft of the valleys. We recalled that a day or two previously we had passed a member of his tribe in a field. Perhaps he remembered it also. One of us was evidently in for a long tramp. Gray and I drew straws to determine which should go after the burro and which should stay behind and mind camp. He was stuck to go after the jack and I to stay behind. I have been wondering ever since which got the best of the bargain. Our arrangement was, that if Gray did not return by next morning at nine, I would leave camp and go after him. I did up the family washing, baked a "beautiful" loaf of bread, by frying it on each side to make a crust and then standing it up against a stick in front of the fire to bake; but when all was done I found time hanging heavily on my hands. I went fishing—was gone just two hours. On my return I was dismayed to find that the Indians had rifled our camp and had taken every bit

of ham and bacon, my proud loaf of bread, and all our salt and sugar. Angry, I went at once to the Indians' camp on the bank of the stream, where I found the old lady roasting grasshoppers in the ashes. My anger melted into interest when I saw her pick out a grasshopper by a hind leg and look him over to see if he was done. There was no sign of my bacon, however. I looked in their bags of acorns to no purpose. Under a blanket in the middle of the camp was hidden a young woman and her two young children. I lifted up the edge of the blanket, but ceased when one of the babies screamed. I suppose the mother pinched it on purpose. At any rate, the baby's cry had the desired effect—my heart melted; and moreover, about that time, a feeling of "sour grapes" came over me, and I decided that if my bacon was under that blanket I did not so very much want it. In disgust I turned toward camp. When looking around, a few minutes later, I saw the young squaw jump into the river with a bag on her shoulders. Aha! my bacon! What would Gray say if he returned and found no bacon? I gave chase, wading through the river, which was more than waist-deep; but the lady was fleet of foot and disappeared into the thick willows. First she dropped her shawl, in true Indian style, to delay me, and then some other articles. In short, she got away, and I had the cold consolation of wading back across the river, soaked to the armpits. At camp I made some mush without salt and went to bed, hanging up my wet things on a stake beside the fire to dry, beaten and humiliated and all alone at night in Hetch Hetchy.

I fell asleep, but was wakened by a frightful roar which seemed like the volley of a thousand cannons echoing and reëchoing across the cañon. Looking toward the river, I saw that the Indians had made a fire, so I did likewise, thinking that that was the proper thing to do when there was a big noise in the mountains. I was completely mystified. Nothing happened, all remained quiet; perhaps I had been dreaming, so I dropped off again to sleep, only to be awakened by a repetition of the roar. This time I was thoroughly aroused. As it was nearly daylight, I replenished the fire and sat out the rest of the night. Presently I heard a whistle from up the trail, and Gray and a young horseman came in sight leading our donkey. "Hello," he said; "you had a visitor last night—bear-tracks all around the camp." It was too late to be frightened, so I told my story of the cannonading. The horseman pointed to a fresh

wound in the cliff; a mass of granite, perhaps a thousand tons, had come down a thousand feet.

That day we spent exploring Tilltill Creek, where I saw my first rattlesnake. Ascending the cliffs beside the gorge I jumped down into a cubical notch about four feet in diameter from which a rock had doubtless been dislodged, when "buzz" went a rattler! My legs automatically straightened out like those of a startled kitten, and I found myself out of the notch on the rock above without knowing exactly how I got there. I could see a coil of the snake under a little manzanita-bush, and I broke his back with a revolver-shot. We could carry firearms in this region in 1886, as it was not then a national park.

Our friend camped with us that night, so we invited him to breakfast—pancakes of corn-meal and flour, but without salt and without baking-powder; it is admitted they were somewhat solid. After we were under way I noticed our friend going to great lengths to tie a string to his dog's collar. After cudgeling my brains for the reason, I finally asked him why he led his dog. He replied that we were soon to ford a sizable stream, and, since the dog had eaten one of those flapjacks, he was afraid he might sink. Thus the elaboration of a mountaineer's joke.

From Hog Ranch we made the Tioga Road, via Ackerson Meadow, and entered Yosemite. We lived for three days on nothing but corn-meal, without salt, without fat, without sugar. We had three principal dishes—corn-meal mush with pepper, corn-meal mush without pepper, and a sort of dried corn-meal griddle-cake, which amounted to something like parched corn. Really it was not bad. In the valley we met Mr. Hutchings, Galen Clark, and the old white-haired photographer, George Fiske, who was still carting his camera about in a wheelbarrow, which he called his "cloud-chasing chariot." The old Frenchman, Mr. Lamon, who planted the apple-orchard under Glacier Point, which, I am sorry to say, is now used as an automobile parking-ground—was alive and most hospitable. He gave us a sack of delicious mountain apples when we left.

The next two weeks we spent traversing the rim of the valley, going out past Snow's cabin and Nevada Fall. We camped in Little Yosemite. We had been late in starting and had loitered on the way, for everything was so wonderful and so beautiful. It was dark when we entered Little Yosemite. With no knowledge of local topography,

we followed the trail with our feet, seeking a likely camping-place with feed for the burro. We were about to give it up when I smelt green grass, and we soon found ourselves on the edge of a little meadow. After supper we slept the sleep of tired youth and were wakened in the morning by peals of girlish laughter. Miss Hutchings,* daughter of the "Father of Yosemite," and a girl friend were out for an early-morning canter and had surprised us asleep.

The trail from Nevada Fall, via the top of Illilouette Fall to Glacier Point, had just been broken—we were almost the first party to traverse it, but found it long and tedious. Glacier Point, however, was compensation for any hardship.

Passing over Sentinel Dome, we finally reached the Fissures, where the granite cliff is cut as by some titanic saw into vertical sheets of granite, making one think of the leaves of a half-open book standing on end. These sheets of granite are perhaps three or four feet wide at their base and one foot at the outer extremity, with corresponding spaces between. I walked out on one of these tongues, dropped a stone from the tip, and counted the seconds until it struck. We were familiar with the formulas at that time, and estimated that it was six hundred feet to the bottom. The point overhung not less than fifty feet. While standing on the tip with my back to the cliff, I felt my stick, which was under my arm, begin to move. Startled, I looked around. Our donkey had followed me out to this skeekity place, and had tried to scratch the inside of his ear on my stick, which conveniently stuck out toward him. Had he been a little more affectionate I would not be here to tell the story. I gave him a rap on the nose, whereupon he put his four feet together and turned around on a place little bigger than an ordinary-sized dinner plate—and I breathed again!

I would never advise anyone to camp at the top of a waterfall. We tried it a little above the brink of Bridalveil Fall and nearly froze. At daybreak the burro was found standing on a tiny tuft of grass in the stream, with his back so humped up that we feared we would never be able to saddle him again. We reëntered the valley by the old Mariposa trail, and about nine o'clock in the evening reached camp on Yosemite Creek behind Mr. Hutchings' orchard, which, be it said, was at that time surrounded by a high board-fence.

* Presumably Gertrude, the younger daughter of James M. Hutchings; Florence, the older daughter, died in 1881.—Editor.

We made a hurried supper of flapjacks—this time with plenty of baking-powder. The cakes were in fact so light that when I tossed one over it failed to come down! We found it next morning in the brush forty feet away. So much for the freak winds of Yosemite!

We left the valley by the Eagle Peak trail, stopping midway for a shower-bath, which we had *au naturel* under the big fall. It was August and the water was scattered into spray, but an occasional big drop would sting on our backs like a spent buckshot. We camped a little above Yosemite Falls. Here we were joined by a prospector carrying his pack on his back. He accepted our invitation to breakfast and had much to say in praise of our fine burro—said, in fact, that he had lived with burros much of his life, and had never found one that did not know more than most men—no one could give him a greater compliment than to call him a jackass.

We traversed the north rim nearly as far as El Capitan, then struck for Porcupine Flat, where we met the Tioga Road. From here we climbed our first mountain, Mount Hoffmann, and enjoyed a superb view of the High Sierra. Descending, just before dusk, we had difficulty in finding our camp, would, in fact, have passed it had not our jack spied us and brayed a sonorous welcome.

At the big Tuolumne Meadows we were welcomed by Old Lembert, who helped out our scanty larder with some jerked mutton. A winter or two before he had been snowed in, and had lived for fifty-seven days on jerked mutton and water until in desperation he had made some snowshoes of cedar bark, and had tramped the ten miles to the Tioga Mine, where he found a bag of flour.

At the Soda Springs we made flapjacks, using the ice-cold carbonated water instead of baking powder. Had our horseman friend been with us he would not have complained of the soginess, for they were light as the finest biscuit. We slept in Lembert's log cabin with a burning log in the fireplace, but it was freezing cold on the far side because of cracks in the floor and wall through which passed a biting draft. I am sure it was colder inside the cabin than outside in the open.

The ascent of Mount Dana is not difficult—merely tedious. It was like going up-stairs, for the mountain, on the south side at least, is a jumble of square blocks of red metamorphic slate almost as regular as building-stones. But what a view was there! To the east lay the desert country, with Mono Lake, almost a perfect circle,

eight thousand feet directly below; to the west and north, were mountain peaks, forest, and innumerable lakes. While we were on the summit we were startled by a sudden sound of rushing wind. We thought it some peculiar mountain phenomenon, until the thing was repeated and we saw an eagle, which, resenting our intrusion, had swooped down almost upon us.

My shoes had given out again; so I was rejoiced to find in the swale between Mount Dana and Mount Gibbs a pair of shoes which had evidently been out several winters. They were much too small, but by cutting away the counters, I could wear them, and they were less painful than my own shoes. Nevertheless, once on the Tioga Road I found it more comfortable to go barefooted, and did so almost from Mount Dana to Colfax, wearing the shoes only when we had to cross sharp rocks.

At Colfax we sold our donkey for twenty dollars to our horseman friend of Hetch Hetchy; so our transportation in the mountains cost us nothing. We had become fond of our donkey, and he exhibited genuine affection for us, for when we shouldered our packs and left him behind in the corral, he brayed and brayed until we were out of sight and sound. The parting was quite as hard for us. We walked to Milton, past the stump of the big oak for which Big Oak Flat was named. It was lying on its side, its roots in the air. By moonlight we passed Jim Town, already a ghost town, and took the train at Milton. We had walked four hundred miles.

ALPINE DANGERS IN THE SIXTEENTH CENTURY

TRANSLATED AND EDITED BY J. MONROE THORINGTON
SECRETARY OF THE AMERICAN ALPINE CLUB

IN venturing to present a translation of the chapter "De Itinerum Alpinorum" from Josias Simler's *De Alpibus Commentarius*, I do so chiefly because of its unfamiliarity to English-speaking mountaineers. While the entire work was translated into French by Coolidge (1904),* and into German by Steinitzer (1931),† with the exception of a few excerpts by Coolidge‡ and others, there has never been a complete English translation. Yet this chapter gives sound and detailed advice in the matter of Alpine travel, and was the most complete source of such information until the appearance of Emile Zsigmondy's "Die Gefahren der Alpen" (1885), and H. Baumgartner's "Die Gefahren des Bergsteigens" (1886).

Simler's work was published by the famous Zürich press of Froschouer in 1574—a press from which came Conrad Gesner's monumental *Historia Animalium*, as well as the first complete Bible in the English language. Although Simler's account is not based upon a personal journey, he presents for the first time the necessary precautions required of travelers in the Alps. The vividness of the descriptions makes it unnecessary that any apology be made to climbers who take interest in the history of their sport.

I have not hesitated to incorporate the four short passages already translated by Coolidge, regretting that that great scholar did not present in English his impressive volume on Simler which his linguistic ability enabled him to write in French. In making this translation it has been a great pleasure to use the remarkable copy of Simler's book, which I have described elsewhere,§ from the library of the French statesman and bibliophile, Jacques-Auguste de Thou, the ownership of which, through three and a half centuries, is known in its entirety.

DIFFICULTIES AND DANGERS OF ALPINE TRAVELS AND HOW THEY MAY BE OVERCOME

HITHERTO I have described the most frequented roads leading through the Alps: now I will devote myself to the difficulties and dangers which confront the traveler in the mountains and then explain how he may overcome them. Now, the roads in the Alps are difficult and dangerous on account of their narrowness, precipices, ice and snow, and because of cold, wind, and storm. First and foremost, almost all paths in the mountains are by very nature rough

* Coolidge, W. A. B.—*Josias Simler et les Origines de l'Alpinisme jusqu'en 1600*, Grenoble, 1904.

† Steinitzer, Alfred.—*Josias Simler, Die Alpen*, Munich, 1931.

‡ Coolidge, W. A. B.—*Swiss Travel and Swiss Guide-Books*, London, 1889.

§ *Alpine Journal*, xl, 141.

and narrow; occasionally they are carved in the rocks by the labor and work of men, yet they remain so contracted that they are scarcely to be used by pack-animals; in some places their width does not exceed two feet. Often, where the trail is interrupted one finds a balcony carried as a bridge from one rock to another, or there are props fixed solidly to the smooth walls of rock, strengthened by long poles, and by means of clods and faggots an actually suspended path is built. Often where no rocks contract, the path is nevertheless narrow in very deep snow, in which a track trodden by men presents no danger; for flanked by the soft deep snow the travelers could not deviate from it.

Many times from such places the view into the depths of the valley causes such terror to the wanderer that numbers, afraid of being overcome with dizziness, allow themselves to be led by the hand by natives who are accustomed to these paths. Sometimes it is possible to be taken over on horses, which are able to pass narrow trails in safety. But even if no crossing in the Alps is quite unconquerable, yet the narrowness of the way brings it about that because of difficulty in transporting baggage and artillery one cannot take an army on every road.

Since one finds long gorges even where the road is otherwise rather easy, one must take care that travelers in these narrow places suffer no harm, especially that no ill befall the herdsmen who accompany the herds of cattle and horses. For annually it is the custom to drive a large number of oxen and horses across the Alps, especially from Switzerland and Germany to Italy. There is no little danger that some alarm may throw the animals into confusion and drive them to their death in the depths. On this account, travelers who cross the Alps, especially drovers who accompany pack-animals or large cattle, settle definitely the hours at which they shall start in order to meet each other on the summits of passes, where there is usually a level place. But if they should encounter each other elsewhere, there is a distinct understanding as to which may remain on the trail and who must make way.

Precipitous and rugged places further increase the difficulty of Alpine paths, and particularly if the tracks are covered with ice, for which reason the travelers and the shepherds, as well as the hunters who frequently roam over the highest mountains, provide for their safety by various precautions. To guard against the slipperiness of



JOSIAS SIMLER
1530-1576



THE EARLIEST KNOWN PICTURE OF AN AVALANCHE
Hans Burgkmair's wood-engraving for "Theuerdank," 1517, which contains the adventures
of Emperor Maximilian I

the ice, these people are accustomed to tie iron shoes,* like those of horses, and furnished with three sharp prongs, securely to their feet, so that they may get firm foothold on the ice; others furnish the thongs, by which the sandals are tied under the foot, in the same way, with a very sharp iron spike, and employ other means in order to resist the slipperiness of the ice and to improve their footing. In some places they use staves tipped with an iron point, and, resting their weight on them, are in the habit of ascending steep slopes. These staves they call alpenstocks, and they are chiefly used by the shepherds. Sometimes also shepherds and hunters let themselves down steep and almost precipitous places, when there is no other way, by cutting down branches from the trees (particularly firs), and then sitting on them as though riding a horse, and thus sliding down. When heavy carts are to be let down difficult places like these, they sometimes lower them by great ropes worked by means of cranes and pulleys.†

This expedient was already known to the ancients, as Ammianus Marcellinus asserts, whose words we have quoted in our description of the Cottian Alps. [Lambert d'Hersfeld d'] Aschaffenburg records something similar, in mentioning the great impediments to Emperor Henry IV in his winter crossing of the Alps:

The Empress and the ladies-in-waiting were seated on cowhides which the guides let down. Also, the horses were let down by means of machines, or dragged by their bound legs, through which many were killed or died later of exhaustion.

Steep slopes are to be found in many places on the same mountain, for if it appears that the way climbs uniformly, and that, having overcome the ridge, the visible crest where the route lies is the summit of the pass, then you see when you have reached it a level place and then again a new slope ahead, a painful deception for those who are unused to mountains. People often persuade themselves that the mountains are not so high or so steep, for seen near by they estimate the rise to be less than the reality. If they can then grasp this and have discovered that their eyes deceive them, then

* Crampons dating from 700-400 B. C. have been found in the Hallstadt area near Salzburg, Upper Austria, where they were used in mining operations. The first pictures of climbing irons and other Alpine equipment, and of an avalanche, occur in *Theuerdank* (1517), descriptive of the adventures of Emperor Maximilian I. Additional plates of avalanches will be found in Stumpf's *Chronick* (1548), in Herrliberger's *Topographie der Eydgenossenschaft* (1765), and elsewhere. Various types of crampons are shown in Scheuchzer's *Itinera Alpina* (1708), Saussure's *Voyages dans les Alpes* (1779-96), and Pieth and Hager's *Placidus a Spescha* (1913).

† Coolidge.—*Swiss Travel*, 17.

they complain of the increased exertion. Silius has observed this phenomenon and recorded it in elegant verse:

The more they climb and the greater their efforts to ascend and cross the rise, the more their labor increases. The difficulties ahead are revealed to the weary travelers, and other barriers arise, so that it is not possible to look back upon their violent and toilsome efforts; so much do the horrid scenes, recurring, bring terror to their eyes; and there is nothing to bound their vision except the sweep of glistening snow. As on the high sea, when fair earth has been lost to sight, and the sails unfilled by a breeze hang limp against the length of the mast, the mariner gazes over the watery expanse, and, overcome by the monotonous surfaces, worn-out, lifts his eyes to the sky.

Ice in the Alps is of importance, not only through its slipperiness rendering the routes more difficult, but it asserts itself in other far greater dangers. In not a few places overhanging rocks threaten with their appearance of instability, which arouses great fear in the inexperienced traveler. But this kind of rock is seldom dangerous, much more often it is the ice which sometimes sweeps down from the heights to the paths below, covering and breaking them, and seriously endangering the traveler passing at the time. Strabo writes as follows of this peril:

The slippery ice masses, poorly secured above, slide to the valleys and entirely cover the paths. Often new ice rests on top of old, especially if snowfall intervenes, before the sun can entirely remove the superficial crust which covers the ground.

Further, that ancient ice, over which one must sometimes make one's way, has deep chasms in it, three or four feet wide, and often even larger, into which if a man fall he must without doubt perish. It happens also that these chasms may be covered by fresh snow, or by snow blown together by the wind. Hence, those who then travel in the Alps hire men who know the places to go in front as guides. They gird these men with a rope, to which some of those who come after also bind themselves; the leading man sounds the way with a long pole, and carefully keeps a look-out in the snow for these chasms; but if he unexpectedly falls into one of them, he is held up and drawn out again by those of his comrades who are tied by the same rope as he is. When there is no snow over these pits, there is

less danger, but yet they must sometimes be crossed by a jump; for there are no bridges here except that sometimes those who lead beasts of burden over such places (which rarely happens) carry wooden planks with them, and lay them before the beasts so that they can cross these chasms by means of a bridge.*

The snowfall at times in many parts of the Alps reaches such a depth that beast and man perish if they sink in it; it is no less a peril than if they were submerged in water. Claudian has this to say about it:

Many have been engulfed beneath vast masses of snow,
and often carts and the oxen that draw them are plunged
into the shimmering depths of the crevasse.

On account of which, and that travelers should be on their guard, the natives are accustomed to erect long poles in the snow, which Marcellinus calls *stili lignei* (wooden poles), by which the wanderers are directed. But usually they are neglectful about this in order to compel the travelers who do not know the route to requisition their services. Finally, in order to facilitate the passage of the roads, the people dwelling in the vicinity of the passes were bound by strict ordinances to keep the way open, a labor not unconnected with much work and danger. On this account men of the nearby villages almost daily traverse both sides of the pass; if they recognize an impending catastrophe, they warn the travelers and improve the route. In many communities, after the first snowfall, they drive oxen through the new snow over the old track, which not only breaks a path by their hoofs, knees, and chests, but also levels it by means of a beam which they draw behind, and they believe that these animals recognize the trail much more quickly than horses and are better adapted for leveling and reopening it. If these measures do not suffice to keep the roads clear, numbers of laborers are engaged to open the way by pushing the snow to one side with spades, shovels, and other tools. In addition, the merchants are obliged, if an unexpected blizzard arrives, to have the highway cleared by hired people and at great expense, in order to permit the transportation of their wares.

Further, those who wish to walk over deep snow, in places where there are no paths, make use of the following expedient to prevent themselves from sinking in it. They tie to their feet small thin wooden

* Coolidge.—*loc. cit.*, 19.

boards or wooden hoops (such as are used in binding wine casks) woven together by a sort of lattice-work of cord of a foot in diameter.* In this fashion, as they make larger steps, they do not sink in and do not go deep down into the snow.†

In Xenophon we read something similar: when the Greeks crossed the Armenian ranges by a route blocked with snow, taught by the natives, they bound little sacks to the feet of their horses and beasts of burden, which otherwise with bare feet would have sunk to their bellies in the snow.

The greatest of all dangers is the sliding of the piled-up snow,‡ which we call *Löwinen*, and in the Grisons is named *Labinae*, a designation doubtless derived from *labare* (to slide); also, the German form [*Lawine*] is a corruption of *Labinae*. The least circumstance suffices to set the snow masses in motion: for example, if on a steep and treeless slope it be disturbed by the passage of a flying bird, by any other animal, by strong wind, or by the cry of men traversing it. In the latter case the air current from the repercussion of the sound, which is called "echo," serves as the impetus that sets the snow in motion. Through such disturbances, be they never so slight, the snow set in motion forms into a ball, which in spinning down becomes so huge and ungainly that further revolutions are prevented. Therefore, it slides down with extraordinarily accelerated force, becoming larger and larger, so that it tears down with it to the foot of the mountain rocks, trees, ibex and other animals, men and houses—in short, everything in its course.

The snow masses projected in this fashion often cover many acres; they fall with such a crash from the mountains that the earth itself seems to quiver, and one who was unaware of the foregoing would believe it resembled the distant roll of thunder. But these avalanches do not occur in all places at all seasons, but only on treeless slopes, usually at the time when the snow melts and softens in the warmth of spring, or if in autumn and winter great masses of new snow suddenly begin to glide on icy and slippery old snow, and under conditions of unusual cold with clear sky. However, one must differentiate two kinds of avalanches: the one, when fresh-fallen soft snow balls and slides; the other, formed of old snow and

* Snowshoes for both men and horses are depicted in Olaus Magnus *Historia* (1507).

† Coolidge.—*Ioc. cit.*, 18.

‡ See D. W. Freshfield's notes on avalanches in *Alpine Journal*, viii, 43.

tearing off a layer of soil with it. The latter are larger and cause more damage than the former.

Some years ago a mighty avalanche, falling in the Rheinwald Valley, in the Grisons near the source of the Rhine, devastated and covered in its course a forest of gigantic firs. Sixty or more Swiss soldiers on the march through the Alps were cut off and overwhelmed by the snow masses. Yet once in a while people, caught by an avalanche, remain alive beneath the snow and are dug out by the natives and thereby called back from the underworld. But this happens only when the accumulation consists of new-fallen snow, and the individual is buried near the floor of the valley where the slide stops; if the prisoner can move his hands in the snow which is not yet hardened and make a space before his face so that it is possible to breathe, he may remain alive two and even three days.

If avalanches have fallen, the inhabitants of the mountains ascertain whether on this day any travelers have been on the way; they estimate the elapsed time and determine in this manner whether they might be in difficulty with the avalanches; in this event the strongest people make ready to excavate the snow, in order to see whether or not someone has been trapped, that they may be helped or whose life might be saved. On level places and in the valleys the precipitated snow masses come to a stop, pile up, and sometimes obstruct the courses of the mountain brooks whose beds they occupy; if the people do not remove this obstacle, the backed-up impounded water sometimes breaks the dam with no little peril to the natives. In the areas in which avalanches falling from the mountains are expected, there are no houses in the valley-bottom, not even huts or cattle-pens, for the peasants are accustomed to build and to live where an adjacent hillock intervenes between themselves and the avalanche tracks. In Canton Uri, at the foot of the St. Gothard, there stretches an extensive forest of beautiful fir-trees, which acts as a wall constructed against avalanches, for in this corner of the mountains, with this exception, one finds no other trees or forests. It is planted in the form of a triangle, so that while it is the rule for avalanches to destroy trees, there is no danger that this forest will be torn down; it protects itself through its peculiar form of construction, becoming always wider and thicker. Quite often, on account of the narrowness of the valley, because there is no other place to build, roads are carried through sections exposed to avalanche dan-

ger. In order to avoid the danger, the travelers must start at day-break, when the peril is less, and pass the dangerous places as quietly and as quickly as possible.

The mountain dwellers who know these spots exactly and recognize the impending danger by certain signs, warn the strangers to take care. If a huge mass of snow has obliterated the road, it melts finally after considerable time: one is obliged to traverse it as if it were a new little mountain or a hillock in the way. Avalanches or great snow masses which fall from the heights have apparently been described by Silius in the following verses:

There, where the path is broken by the gleaming slope of the hill, which the cold has frozen solidly, he [Hannibal] pierces with his iron the ice which resists: the detached snow hurls men into the chasm, and falling with violence from the high peak buries the squadrons alive.

The poet depicts with great exactness how Hannibal conquered the smooth and icy slopes, covered in deep soft melting snow, in which the marching soldiers disappeared as if they had been swallowed by a gulf, and how the snow coming down from the heights tore whole squadrons of cavalry with it. But similar misfortunes occur only on very high mountains and on steep slopes, chiefly when great accumulations of snow, fallen on ice, begin to soften and melt, so that the heaped-up snow precipitates as an avalanche. This is doubtless what Claudian wished to describe in the following verses in which, to be sure, he speaks not of ice, but of snow:

Sometimes the mountain plunges down as an avalanche of ice, and under warm sky tears down with it the foundations lightly secured to the steep slope.

Further, among other evils, the intense cold is very troublesome to those making a journey through the Alps, especially as long as the north wind is blowing, in consequence of which the limbs of many men often burn by reason of the extreme cold, while in the case of others their ears or noses, or their fingers or toes, and even the feet themselves, grow numb by reason of the cold, and die. Many lose their eyesight through continually going over snow. Against these evils there are various safeguards: for the eyes, something black should be put over them, or what they call glass spectacles: *

* Spectacles were invented about the middle of the thirteenth century, possibly by Roger Bacon. By the middle of the fourteenth century convex lenses and spectacle frames were in general use.

for other parts of the body it is advisable that they should be well protected against the cold by skins and thick clothes; paper and parchment protect the breast very well from cold winds; but if the feet are benumbed at night, when the shoes are taken off, they should be bathed in cold water, warm water being gradually added, for so they think they are brought round. The best precaution of all is to constantly move about, for it happens sometimes that while ascending a mountain men get heated by their exertions, and think that they feel no cold; but if they sit down in the snow for the purpose of resting themselves, drowsiness soon creeps over them, and then, with scarcely any feeling of pain, they are benumbed and die.*

Bearing on this point are the verses of Claudian in his description of the Alps of the Grisons: "Many a one has become rigid with cold as if he had gazed at Medusa."

Xenophon in very definite terms, which I now quote, has explained just how movement is the best means of preventing death from freezing:

If I came across a benumbed exhausted man, who by falling out was in danger of coming into the hands of the enemy, I urged him on, commanded him to rise and to march farther. For I discovered for myself that a rest only made the body more sluggish and slow: if I, as sometimes happened, occasionally remained somewhat behind, awaiting the men concerned with the baggage, I felt how the frost penetrated my legs. Taught by personal peril, I aroused every man brought to a similar condition by the cold, whenever I saw one, for I well knew that motion and vigorous action warmed the bodily extremities and produced sweat, while resting and lagging on the march might paralyze the already chilled blood, and because of which the toes might become frozen, a frequent accident as you yourself know.

Even our peasants, not on account of Xenophon, but taught by long experience, protect themselves in this manner from freezing.

All of these perils are markedly increased by bad weather; for not only on the sea, but also in the mountains, there are mighty and catastrophic storms. In the Alps the winds are at times cold and strong; at others their violence increases to extraordinary fury; if snowfall, rain, or hail is added, it is no longer possible to begin a journey, as the conditions are not only unbearable, but also the vision

* Coolidge.—*loc. cit.*, 12.

and the finding of the path are rendered obscure; likewise it is, when the wind blows old snow to drifts, as when in Africa, caravans are sometimes suffocated in sand heaped by the Simoon, the blizzards in the Alps endanger travelers in the most serious manner. So it is most risky to traverse bad and narrow trails in high wind, for it is to be feared that one will be dashed into an abyss by the force of the storm. Travelers are often obliged to remain two or three days on the summits of passes, until the tempest has subsided, and the paths have been opened and put in condition by the inhabitants of the neighboring valleys. On passes frequented by merchants one usually finds hospices, which as a rule offer only necessary shelter and food, in so far as the place may justify it, since all provisions must be sent up on pack-animals. Even to Silius these mountain storms were not unknown; he has described them in the following verses:

Frightful *Corus*, after massing the snow in a fatal whirlwind, sometimes hurls it on dark wings in the face of the traveler; or, blowing furiously, seizes the weapons torn by the storm from the venturous warrior, and turning in a circle carries them into the mists in a twisting vortex.

Not without reason does Silius name *Corus*, the *Argestis* of the Greeks, as the mightiest of winds; it is one of the coldest, brings hail, and appears to be the same wind as the *Circius* [Mistral] of Provence, "whose power is equaled by no other, since it lifts the roofs from the houses," as Pliny says. Even Cato agrees with this, when writing the following words concerning the Spanish mountains:

It might be said that *Circius* closes the mouth if one speaks.
It overthrows an armed man, or a cart with its load.

Xenophon presents in Book V of the *Hellenica* an example of the force of storm in the mountains:

When Cleombrotus set forth, there arose an extraordinarily violent wind; some saw in it an evil omen, and actually it portended great disaster to the army: for when it descended from Creusis [in Boetia] over a mountain trending toward the sea, two hundred animals laden with baggage were hurled into the water; even the soldiers took off their weapons and threw them into the sea. Many could no longer carry their equipment, and were compelled to weight them with stones and leave them behind.



THE CLIMBING-IRONS SLIP ON THE MOSS

From a wood-engraving by Leonhard Beck, in "Theuerdank," 1517
(The pictures in this book are the first to show Alpine equipment)



David Starr Jordan

DAVID STARR JORDAN

BY PAYSON J. TREAT

AMONG the little group of earnest and far-seeing Californians who, under the leadership of John Muir, founded the Sierra Club in 1892, was the young President of Stanford University, David Starr Jordan. Already distinguished as a scientist and educational leader, he associated his strong influence with this idealistic cause. During the early years of the club's history he was frequently a director, and usually a member of both of the important standing committees, Parks and Reservations, and Publications, and usually the chairman of one of them. When, in 1905, the office of Honorary Vice-President was created, and he was chosen in the first group, his letter of acceptance voiced his sincere feelings: "I have the deepest interest in the work of the Sierra Club, and doubt if any other society to which I belong comes as near to my heart as that."

On the nineteenth of September, 1931, this truly great Californian passed quietly away. He had crowded a long life of over eighty years with achievements in many fields. He had contributed much to science, he had created a great university out of the fullness of his wisdom and the nobility of his spirit, and he had been a steadying factor in many of the storms which had broken upon the life of the nation. Many a tribute has been paid to his uniquely useful career, and as the years go by we may expect even more careful appraisals will be made, for the influence of so many-sided a personality cannot be judged in terms of a day or a generation. Here, however, would seem to be the place where reference might well be made to the interest and influence of this fine spirit in the things which mean most to the members of the Sierra Club.

The main outlines of Dr. Jordan's career have been sketched by himself in a frequently quoted paragraph:

For half a century the writer of these pages ["The Days of a Man"] has been a very busy man, living meanwhile three more or less independent lives; first, and for the love of it, that of naturalist and explorer; second, also for the love of it, that of teacher; and third, from a sense of duty, that of

minor prophet of Democracy. If he had his days to live over, he would again choose all of the three.

Born near Gainesville, New York, on January 19, 1851, he graduated, with the degree of Master of Science, from Cornell University in 1872. After several years of secondary and collegiate teaching, he became professor of Natural History, which in those days included Zoölogy, Geology, Botany, and Physiology, at the University of Indiana in 1879, and its President in 1885. In the spring of 1891, Governor and Mrs. Stanford called upon him and offered him the presidency of the university which they had been building on their Palo Alto farm. From that time until 1913 he served as President, assuming the title of Chancellor for the remaining three years of his active association with the university. Those later years, and the fifteen which were still to be his, were devoted for the most part to the cause of good understanding among the nations, which brought him many unhappy days when the war madness swept over his country and many satisfactions when time had vindicated the serenity of his views.

Perhaps I may be permitted to add my tribute, as one who was associated with the great President during some of the early years of Stanford's history. It was his vision of the real purpose of education which set the standards which made Stanford distinguished among its fellows. It was his unflinching courage and optimism which held the university on its course during the early days when fate seemed to conspire against the hopes of the founders. To David Starr Jordan and the courageous Mrs. Stanford, California and the world are under a great obligation. It was his love of teaching, which he never relinquished, which inspired his faculty. It was his productivity as a scholar, which assumed an amazing proportion in view of his engrossing duties, which stimulated a love of investigation and the search for truth among his fellow workers. And it was his preaching and practice of the clean life, the wholesome, up-building life, the generous, self-giving life, which moulded the ideals of the young men and women who came under his influence. The effect of his precept and example upon the lives of unnumbered thousands, within and without the university, who knew him in person or only by the spoken or written word, can never be adequately estimated. He possessed the effective faculty of making things easy for men to comprehend. His addresses were models of simple but

forceful presentation. His writings, of which only a partial list would be impressive, were often addressed to the general public in newspapers and periodicals, as well as in learned publications and substantial books.

But a striking feature of his life, which is so well brought out in his autobiography, was his love of the out-of-doors.

Jungle and town and reef and sea,
I have loved God's earth and God's earth loved me,
Take it for all and all.

He was no scholar working over a microscope, no administrator chained to a desk. His interest in the natural sciences, especially Ichthyology, called him into the open. When he was a teacher in Indiana, he made numerous excursions to study the fishes of the Southern States, and his first visit to California was in the winter, spring, and summer of 1879-1880, when he worked along the entire coast from San Diego to Puget Sound and British Columbia. It was during this summer that he first met John Muir and the elder Le Contes, of the University of California. There was scarcely a summer, from 1876 until his last illness, that he did not take the field in various parts of the United States, Mexico, or Canada, or travel in Europe, where he always sought out the Swiss Alps or the wild regions of Scandinavia. It was in the summer of 1881 that he climbed the Matterhorn, at a time when the ascent of that once formidable peak was no easy matter. In numerous addresses on this theme he preached the gospel of hardiness and the love of the high places. Often the Christmas or Easter vacations were also spent in scientific studies nearer at hand. Longer trips were those to Japan, where in 1900 he worked along the entire coast, from the far south to the northern waters, and when he gained that insight into the real qualities of the Japanese people which made him their valued interpreter in the later years. He also twice studied the seal industry in Alaska and collected in Hawaii and Samoa, and in later years he revisited Japan and twice traveled in Australasia.

By 1890 [he wrote] I had personally visited every considerable river basin in the United States. Later I extended my studies to include much of Alaska, Mexico, and Canada, as well as the South Seas, Japan, and Korea. Of the species of fishes now known—between 12,000 and 13,000 in number—my former students and myself discovered more than 2500 in the course of our various investigations.

Of the 7000 genera, actual and nominal, named since scientific nomenclature began in 1758, 1085 are to be credited to us.

His was an amazing record of travel, both scientific and educational, and it brought him into the wilder country, the broken coast lines on both sides of the Pacific, the mountains of the Far West, the rivers and lakes of the Canadian border, the fog-swept islands of Alaska. He could speak of America because he knew the land, the cities and waste places, and the people of every walk.

And he loved California. In one of his early essays, which was three times reprinted as a booklet, he wrote of "California and the Californians," and he voiced a theme which has been developed by many another since:

The Californian loves his state because his state first loved him. He returns her love with a fierce affection that to men who do not know California is always a surprise.

And he knew whereof he wrote. After he removed to Palo Alto he spent many a vacation in adding to that acquaintance which he had made on his first collecting expedition. In those days of horse-drawn vehicles he explored the regions all around the bay, the missions, strung out like pearls of civilization along the thread of the Spaniards' advance, the Sierra from Shasta to the Kings, Lake Tahoe and Yosemite. It was just as he was about to ascend Shasta that the news of the death of Leland Stanford recalled him to the university. In the Tahoe region he explored the back country with a pack outfit, and in the southern Sierra he knew and loved the Kings River and ascended some of the higher peaks. And he wrote of these travels so entertainingly that many another was tempted to follow in his steps. The influence of his gifted tongue and pen in arousing an interest in the California scene cannot be measured. And he ever tried to stimulate a zeal for the preservation of these natural wonders which are the heritage of Californians.

In the summer of 1899, with Mrs. Jordan and some Stanford friends, he made a pack-trip into the Kings River which led to a widely distributed article and booklet on "The Alps of the Kings-Kern Divide." In the concluding passage, after speaking of the ascent of Mount Stanford, he added:

From this peak one may see nearly all the high Sierras, from the San Joaquin Alps on the north to the Kern Alps

on the south; and whoso once climbs this crag or the peak of its sister university, or any other of their craggy brethren, has earned a place in the roll of honor of those "whose feet are beautiful on the mountains." He has learned the secret of California. He will join the Sierra Club. He will fight in every way he knows against the wanton destruction of our forests and the desecration of our mountains, and, whenever the fates permit, he will wander back to the "heart of the Sierras," the Ouzel Basin, the golden-trout streams, and the Mountains of the Great Divide.

Some unpublished correspondence will bring out this interest in the Sierra at a later date. On February 8, 1926, Francis P. Farquhar wrote to him in reference to the naming of a peak in the Sierra in his honor. It seemed that his name had once been given to what had already been designated as the North Palisade.

It has seemed most appropriate to our committee that some prominent peak in the High Sierra be named Mount Jordan. Accordingly, Professor Le Conte and I have selected one which we believe to be particularly appropriate. It is one of the points on the Kings-Kern Divide, very near Mount Stanford. This time we have endeavored to make sure that no previous name exists. We are taking steps to have this name officially adopted and placed on the maps of the U. S. Geological Survey.

We feel that you will be particularly pleased at the selection of a peak in the region where you spent some time in 1899, and which was the inspiration of your admirable book on the Kings-Kern Divide.

In connection with that visit to the Sierra, may I ask whether you have climbed any of the peaks in that vicinity? Professor Le Conte was under the impression that you climbed what is known as North Guard, just north of Mount Brewer, but recent reports are that there is no monument or any indication of an ascent on the summit. He was also under the impression that you gave the names of North Guard and South Guard, but I find these names on a map dated 1896.

To this letter Dr. Jordan replied the next day:

I have your very kind letter in regard to Mount Jordan. I never laid it up against you, but I altered what I had already written in my autobiography in regard to Professor Brown naming the North Palisade for me. I believe in the law of priority and so I made no fuss, but cut the page down to correspond with the truth. I felt that I was honor-

ing you and Dr. Le Conte by naming you the "villains" of the piece. How awkward I would have felt if I had waited perhaps a hundred years and then discovered that there were one and perhaps two names.

I feel very much honored to be associated in any way with these great granite mountains, and also to get in line with my fellow evolutionists, Dana, Lyell, and the rest of them. I am sure that Agassiz would have been one of us if he had been born a little later or could have lived a little longer. He once told me how near he came to anticipating Darwin but was thrown off the track by an error in regard to the name of certain facts of Paleontology.

I climbed one or two mountains a good many years ago when I made a map of the Ouzel Basin, lying north of Mount Brewer. It was in this basin that Muir wrote the best biography in existence of the water ouzel, which is called rather effectively "the humming-bird of the waterfalls."

The only mountain in that neighborhood that I actually climbed was the one we called Mount Stanford, adjoining Gregory's Monument, and the one called University of California Peak on the other side of the valley. I did not give the names North Guard and South Guard. I suspect that Brown was responsible for this.

Again thanking you for your courtesy and for your alleged villainy, and expressing my thanks to Dr. Le Conte and yourself, I am, etc.

And again he wrote on May 22d:

I thank you for the map and the pains you have taken. I remember the mountain, but did not try to climb it. I can never climb any mountain again.

I published in the *Bulletin* in 1900, a map of what I called Ouzel Basin, with Ouzel Creek and East Lake, and naming its tributary brooks for the beasts which lived about. We spent that summer mainly about Kanawyers, going up Bubbs Creek to California Peak and up Ouzel Basin and Harrisons Pass to Mount Stanford.

My son Eric was several times in that region — from Kaweah to Yosemite.

So the members of the Sierra Club may rejoice that this great scientist, educational leader, foe of ignorance and passion, was one of their own company. He loved God's earth, and he labored to bring others to love it as he did and to treasure its beauties as would he.

COLONEL GEORGE W. STEWART

FOUNDER OF SEQUOIA NATIONAL PARK

BY FRANCIS P. FARQUHAR

GEORGE W. STEWART was born at Smith's Flat, near Placerville, California, on April 29, 1857. His father, William Stewart, a native of Scotland, lived for a while in Massachusetts, later in Wisconsin, and came to California in the early '50s. His mother, Eliza Ennisson Stewart, was a native of England. The Stewarts lived in El Dorado County until 1869, when they moved to Santa Cruz County. In 1872 George Stewart went to Tulare County, and in 1876, at the age of nineteen, began to write for *The Visalia Delta*, becoming local editor in 1878. In May, 1880, he became associate editor of *The Mining and Scientific Press*, of San Francisco, but left this position in September of the same year to go to Hawaii, where he became local editor of *The Honolulu Saturday Press* and assisted in compiling *The Hawaiian Annual*. During his two and a half years in Hawaii he formed an intimate and lasting friendship with Charles Warren Stoddard. In 1885, after a brief stay in Arizona, he returned to Visalia and resumed work on the *Delta*, and in 1887, with two others, he formed the Delta Publishing Company. He edited "San Joaquin Valley Resources," published from 1886 to 1888, and contributed to many publications, and continued to edit the *Delta* until 1899. He married Martha L. Rowland, of San Francisco, in 1891.

Stewart joined the California National Guard in December, 1887, as a second-lieutenant, Company E, 6th Infantry, and during the Spanish War was stationed at the Presidio of San Francisco, with the rank of captain. Subsequently he held the ranks of major and lieutenant-colonel. He was the author of a "Manual for Non-Commissioned Officers," printed at Visalia in 1901. "Special Orders No. 3," issued from the Adjutant General's Office, August 14, 1907, placed George W. Stewart on the retired list with rank of lieutenant-colonel from October 7, 1903, with the following remarks:

Lieutenant Colonel Stewart's record as an officer of the National Guard of California is one in which he may well

take pride, and it is to be regretted that a military necessity takes such a valuable officer from the active list.

Following his discharge from active duty in 1898, he entered upon a new career, receiving an appointment from President McKinley as Register of the U. S. Land Office, at Visalia. To this position he was reappointed in 1902, 1906, and 1910. At the close of his last term, in 1914, he opened an office in Visalia as a land attorney. In 1927, because of the discontinuance of the Land Office at Visalia, he removed his practice to Sacramento. While on a visit to Visalia in June, 1931, Mrs. Stewart died very suddenly. Colonel Stewart immediately gave up his office in Sacramento and returned to Visalia. His health had for some time been failing, and in September he came to San Francisco for an operation from which he did not recover. He passed away on September 6th. A daughter (Emily Forbes Stewart) lives in Reno, Nevada, where her husband, the Very Rev. Bayard H. Jones, is dean of Trinity Cathedral.

Colonel Stewart's work with the Land Office brought him into frequent contact with the Indians of Tulare County. In him they confided as in few other white men. He sympathized with them, protected them as best he could, and in return learned a great deal about their lives and their history. For many years he took extensive notes, particularly in regard to the language and customs of the Yokuts. Part of this information is embodied in an article, "The Yokut Indians of the Kaweah Region," which he wrote for the *SIERRA CLUB BULLETIN* (volume xii, number 4, 1927, pages 385-400). He also contributed articles on Yokut myths to the *Journal of American Folk-lore* in 1906 and 1908. He was very much interested in evidences of a prehistoric race of Indians in Tulare County, or, at least, people differing to some extent in language and customs from the inhabitants of recent times. In the *American Anthropologist* (July-September, 1929, volume xxxi, number 3,) he described certain "Prehistoric Rock Basins in the Sierra Nevada of California," and hoped to publish an article on prehistoric Indian pictographs, for which he had collected extensive notes and illustrations.

Throughout his life George Stewart was inspired by a love of the High Sierra and the Big Trees. His first visit to the mountains was in 1875. In 1899 he went to Mount Whitney, and from that time scarcely a year passed without a visit to some part of the Sierra Nevada. As the years went by, he became more and more attached



FROM SAN FRANCISCO TO MOUNT SHASTA

Altitude 21,000 feet; 500 mm. lens; F 5.6; 1/5 sec.; No. 99 A filter (infra-red); Kryptocyanine film; January, 1942
Photograph by Captain Albert W. Stevens, U. S. Army, Air Corps

SIERRA CLUB BULLETIN, VOL. XVII.
Siskiyou Mountains

Mount McLoughlin

PLATE XVII.
Crater Lake



MOUNT SHASTA (14,162 FEET) FROM THE AIR, LOOKING NORTH
Altitude over 15,000 feet; 500 mm. lens; F 5.0; $1/5$ sec.; No. 89 A filter (infra-red); Kryptocyanine film; January, 1932
Photograph by Captain Albert W. Stevens, U. S. Army, Air Corps

to the Giant Forest, and spent many weeks there each summer. His perceptive and sympathetic studies are set forth in a little book published by A. M. Robertson, San Francisco, in 1930, "Big Trees of the Giant Forest."

For several years there flourished in Visalia the "Mount Whitney Club," organized in 1901 for the purpose of making Mount Whitney better known to the public. George Stewart was very naturally its president, and to his enthusiasm was due the publication of the *Mount Whitney Club Journal*. Three annual numbers were issued, in 1902, 1903, and 1904, constituting numbers 1, 2, and 3 of volume i, with a total of 134 pages. To the second number George Stewart contributed an article on Mount Whitney, as well as one on "Out-fitting for a Mountain Trip," followed by "Suggestions for Women," by Mrs. Stewart. For the final number he wrote on "New Roads and Trails." The first number contained an article on "Climbing Mount Whitney," by his daughter, Emily, who made the ascent when six years old.

The movement for establishing national parks in California grew out of a more comprehensive plan for protecting larger areas as national forest reserves. Colonel Stewart has given the main outline of this campaign in an article, "Early Governmental Attempts at Forest Conservation," published in the *SIERRA CLUB BULLETIN* last year (volume xvi, number 1, February, 1931, pages 16-26). In this article, however, he gives very little intimation of the important part he himself played in advancing the cause. That the Sierra Forest Reserve, later the Sierra National Forest, owed a great deal to Colonel Stewart's activity is clearly shown in an article in *The Bakersfield Morning Echo* of June 13, 1902, entitled, "The History of the Sierra Forest Reserve."

The story of the founding of Sequoia National Park, when it comes to be fully told, will stand proudly in the annals of America with that of the founding of the Yellowstone. In the files of *The Visalia Delta* will be found much of the material for that story, for it was as editor of that paper that George Stewart conducted the campaign. It is a story of the triumph of good citizenship over greed, cunning, fraud, and connivance in high places. Too often in such warfare the rogues have the better of it through more intimate knowledge of the ground and of the methods of procedure, but in this instance the situation was reversed. George Stewart and his

associates were thoroughly familiar with the land surveys of the Sequoia region, and they were well acquainted with the laws under which land claims were made, so that they were able to frustrate many of the efforts of the opposition. Moreover, in arousing the interest of national conservation leaders they conceived and carried out a well-directed campaign which brought about the legislation necessary to the preservation of the big trees.

The methods that brought about the founding of Sequoia National Park were characteristic of Colonel Stewart in all the work he undertook. He was always intimately familiar with the ground, he always understood thoroughly the rules, laws, or principles governing the case, and he worked directly to the point without wasting time on irrelevant matters or on useless emotional display. In later years his wise counsel was much sought after by those in charge of the national parks, and on many occasions he rendered invaluable service, as has been testified to by Director Mather, Director Albright, Superintendent White, and others.

Colonel Stewart was so modest and so self-effacing that the full extent of his contributions to the public welfare and to the store of knowledge will never be known. As a journalist and contributor to newspapers and other periodicals, he advocated forcefully and effectively many movements which but for his watchfulness and repeated efforts would not have come to fruition. Happily, his work was in many instances well known to his friends, and toward the close of his life he was publicly accorded a measure of the honor that was his due. On April 30, 1929, in Visalia, before a large gathering of his friends and former neighbors and of officers of the National Park Service, he was acclaimed as the founder of Sequoia National Park and the savior of the big trees of Giant Forest. At the same time announcement was made that a beautiful peak on the Great Western Divide, at the head of the Kaweah, had been named Mount George Stewart.

Outstanding above his achievements as a public-spirited citizen, above his abilities as a journalist, above his remarkable learning in anthropology and in natural sciences, was Colonel Stewart's lovable character. There was a simplicity, a purity, a spirit of gentleness about him, yet somehow these qualities never seemed inconsistent with his soldier's title, which he bore with dignity and humility as one who ever stood ready to serve his country.

MOUNT WHITNEY BY THE EAST FACE

BY ROBERT L. M. UNDERHILL



OUR party had been gradually decreasing in size as we moved southward to more and more ambitious objectives. We had begun, most of us, up in the Yosemite as part of the Sierra Club Outing of 1931. At the close of that trip, nine, under the management of Francis Farquhar and the invaluable counselorship of Norman Clyde, had moved down to the region of the North Palisade where we had culled a little bouquet of new climbs in spite of four days (believe it of the Sierra or not!) of bad weather. Shifting southward again for our culminating effort, directed upon Mount Whitney, we finally found ourselves a little remnant of five.

At Farquhar's invitation and under his expert arrangement of program, I was enjoying a first climbing season in the High Sierra. The unclimbed east face of Mount Whitney had been in both our minds from the start. True, whenever the subject came up for express discussion Farquhar was wont to observe with a chuckle that the face was pretty much of a precipice; but this seemed to diminish in nowise his estimate of the value of paying it a visit, and I eventually became highly stimulated by his view that sleek verticality was merely the normal terrain for rock-climbing activities. Clyde, when he joined the party, gave a guarded confirmation of the topographic point, by judging, from his more intimate acquaintance with the mountain, that the face was "pretty sheer." However, he showed himself completely indulgent to the enterprise, and gave us the immense benefit of his practical knowledge, without which we should have lost much time in coming to grips with our problem. The other two members of the group—Jules Eichorn, of San Francisco, and Glen Dawson, of Los Angeles, young natural-born rock-climbers of the first water—had never seen the mountain; but neither had they seen any up and down the Sierra that they could not climb, and they were all enthusiasm.

On August 15th, then, we started up the Mount Whitney trail from Lone Pine. Here I discovered that the best way to obtain a pure enjoyment of mountain scenery is by all odds to entrust the

concomitant task of making elevation to a mule. However, we had to reassume operating responsibilities ourselves, and thereby give up all but a practical interest in the scenery, at a point somewhat short of the usual base camp, and strike up the North Fork of Lone Pine Creek. Relieving the pack train of its load, we here shouldered outrageously heavy knapsacks (Clyde's being an especially picturesque enormity of skyscraper architecture), and worked up the side cañon via a high southerly shelf discovered by Clyde upon a previous occasion. Ripe currants, or at least the opportunity to delay while eating them, seemed to be a great attraction to some along here. The shelf at length debouched upon a knoll, on the farther slope of which, above the stream, we found the most beautiful camp-ground I had yet seen in the Sierra. It lay at an altitude of about 10,500 feet, with the eastern escarpment of the whole Whitney group high and clear before it. In recognition of the fact that Clyde had discovered the spot, at least for mountaineers, and had hitherto been the only climber to use it, we hailed with one accord Farquhar's suggestion that it be christened "Clyde Meadow."

As we contemplated our mountain, in the evening light, I felt that it would be a mighty hard nut to crack. Certain vertical black lines, indicating gullies or chimneys, were indeed visible, but the questions remained whether they were individually climbable and susceptible of linkage together into a route. Every rock-climber knows, however, that such questions as these can be answered only at very close quarters; in particular, the broadside view of a peak, at any distance, is wholly non-committal or misleading. One feature, indeed, impressed us greatly. The northerly section of the east face stands forward from the remainder in a great square abutment, terminating above in a shoulder that lies some hundreds of feet below the actual summit. The object was clearly to gain this shoulder, and Clyde informed us of his own experience (for he had once descended thus far from the top) that the ascent from it to the summit was easy.

Somewhat before seven o'clock the next morning, August 16th, we left camp. After the prolonged bad weather, we were treated to something more than what is considered, in the Sierra, an ordinary good day, and would rate as a perfect one elsewhere; even the Californians did not succeed in remaining impeccably *blasé* about it. (I observed that they took to exclaiming, later on, over the hundreds of miles of clear visibility into Nevada and southern California.) Clyde led us

down across the brook meadows and up along an "apron" of granite on the other (north) side to the floor of the next higher basin, thus neatly avoiding a long talus-slope in the line of more direct ascent. Crossing the brook again to the south, we now mounted the heel of a ridge which ran directly west into the mountain. This ridge rose in several steps, and at the top of each we paused a few moments to scrutinize, from ever higher and nearer, the problematic face. And it continued to look, I must confess, downright unclimbable. We had rather grown into the feeling, in the Palisades, that every Sierra mountain-wall could be climbed, if only one tackled it properly; but at the present juncture I personally found myself becoming shaken in this conviction and wondering whether we weren't at last up against the so-called exception that proves the rule. I took to mapping out a route up the couloir to the south of the mountain in lieu of one up the face proper.

Our ridge now ran level for a bit, then sank slightly, preparatory to joining Mount Whitney itself, up which it swung for a distance in the shape of a steep but broken rib. At its low point it formed the barrier of a subsidiary cirque to the north (i. e., to the northeast of Whitney) that contained a little lake. On the shore of this lake, just under the peak, we gathered for a final intensive bit of observation. Suddenly I saw what seemed a just possible route, and simultaneously Dawson and Eichorn exclaimed to the same effect. It turned out that we all had exactly the same thing in mind. Through the field-glasses we now examined it in detail as well as we could, noting that much of it seemed possible, but that there were several very critical places. Rating our chances of success about fifty-fifty, we were eager to go ahead with the attempt.

To our extreme regret, Farquhar now decided to leave us. Not having had as long a period of training as the rest of us, he felt that his presence might delay the party at critical points, and for the general good he renounced a share in the climb. After watching us for a while he set out alone, at his own pace, by way of the gully to the north, with which he was familiar through having descended it with Clyde in 1930.

Leaving at the lake everything we could spare, we left it at 9:30 and proceeded up the rib already mentioned about five hundred feet over loose rock, past one small tower on the left and to the foot of another, where the rock steepened and became firm. Here we rode

up (10:00), Dawson and I together, and Eichorn and Clyde. (I might remark at once that the whole climb was a thoroughly coöperative enterprise. At times one rope would go ahead, then the other; and each rope shifted leaders several times.) The first problem was to get from our position on the outjutting rib back to the true face of the mountain, to the left (south) of it. A direct rising traverse along the left flank of the rib looked inviting at first, but when I had climbed up here some distance I didn't like the looks of the remainder and suggested that Eichorn and Clyde try around to the right instead. This latter proved to be the preferable way: climbing some seventy-five feet diagonally to the right up the tower before us, we then traversed along its right flank to a little col; here we recrossed the rib to the left (south), descended to a little gully some forty feet, and moved a few steps farther to the south on a good ledge to the face of the mountain, just at the level where its lower precipice breaks back in some rising tiers of slabs.

These slabs were climbed easily for some three hundred feet up into a little recess, bounded on the right by the rib we had left, on the left by a low rock wall, and in back, or straight ahead of us, by a new uplift of sheer cliff. We now surmounted the wall to our left, and found ourselves on the southerly edge of the huge rectangular abutment previously mentioned (it was the face of this abutment which we had hitherto been climbing), and looking into the deep reëntrant right-angle where it joined the southern half of the general east face, or the main body of the mountain. Descending slightly, we traversed right (west) along the side of the abutment into this corner.

It was clear that the hardest part of the climb now lay before us. The right wall of the corner—the wall of the abutment, leading to the shoulder—was out of the question. The left wall—that of the mountain proper—sloped back promisingly after a couple of hundred feet, but that initial section looked like trouble. We attacked it at first close to the corner. After climbing up perhaps fifty feet here, however, we were confronted by a bad crack.* It looked climbable at a pinch—in fact, Dawson and Eichorn were both confident of being able to do it and eager to have a try—but before such a *tour de force* was undertaken Clyde and I urged that a traverse, which we

* On September 6, 1931, Glen Dawson, Walter Brem, and Richard Jones descended the east face, varying from the route of the ascent by roping down over this crack.—E. H. H. H.

had all already noticed out to the left, be investigated. For this we descended part way again and then moved out to the south around a minor protruding rib which had obscured the farther view. Encouraged by what we saw we continued the traverse, which now led us out in a very exposed position directly over the tremendous precipice that falls a thousand feet to the snow-fields and talus-piles at the foot of the mountain. Some loose rocks which we here pried off fell without a sound for an uncanny number of seconds before crashing once for all at the head of the glacier. The hazard, however, was only illusory, as the holds were good and the climbing not difficult, though involving more delicate problems of balance than had any hitherto.

The traverse, perhaps a hundred feet in total length, turned diagonally upward into the foot of a small chimney containing much loose rock. Half-way up this chimney we moved out of it again on the right and climbed directly up over a couple of shelves. The last of these was spacious enough to accommodate the whole party, and here, in a very airy situation, fronting the magnificent drop to the glacier, we paused twenty minutes for lunch.

We had now practically passed the band of difficult rock. A short movement to the left, across the head of the little chimney, a straightforward pitch or two upward, and a longer easy traverse back again to the right returned us into the corner formed by the great abutment, at a point where its left flank (upon which we were) took the shape of a large gully sloping back at a pleasant angle. Up this we scrambled, at first easily for a hundred feet over scree, then with increasing difficulty for seventy-five feet more over a series of huge granite steps. The last of these steps was surmounted, in its left-hand (southwest) corner, by means of a pretty little chimney, the secret of which—discovered by Dawson, leading, for the whole party—was to step out, near the top, upon the south wall of the great gully. Here we observed that a route from our lunching-place, directly up the south ridge of the gully to the point where we now stood, would probably have been easier than the one we had taken up the granite steps in the base of the gully itself.

Our difficulties were now over. Moving around the head of the gully to the right (north), we found ourselves upon the shoulder that caps the great abutment, with nothing but easy broken rock, as Clyde had foretold, between us and the summit. The monument

hove in view, unexpectedly close above, and was greeted with a cheer. Taking off the ropes, which were no longer necessary, we made our way individually up the final stretch by various routes (the easiest seemed to be around to the left near the top), and at 12:45 were shaking hands with Farquhar on the summit.

The route we had followed was exactly that which we had mapped out originally while standing by the little lake. Much of the fascination of our climb lay, in fact, in seeing the sections which we had marked out for ourselves as critical successively opening up to permit us a way. The rock work was not really difficult. There is, I should say, less than a thousand feet of it from the roping up to the unroping place, and I believe a good climbing party that knew the route could ascend from the lake to the summit in something like half the time we required upon this first occasion. The beauty of the climb in general lies chiefly in its unexpected possibility, up the apparent precipice, and in the intimate contact it affords with the features that lend Mount Whitney its real impressiveness.



THE ALASKA BEAR
Photograph by John M. Holzworth



ALASKA BEARS WATCHING FOR SALMON
Photograph by John M. Holmworth

SANCTUARY FOR THE ALASKA BEAR

BY STEWART EDWARD WHITE

WE have in Alaska what is described often as the "largest carnivorous animal," though one of the adjectives is ill-chosen. The great Alaska brown or grizzly or Kodiak bear eats very occasional meat; though, in popular legend, his chief diet is hardy Alaskans, whom he attacks ferociously on all occasions. The legend is a persistent one, that has thriven wondrously in the towns and settlements until it has in the minds of many become settled fact. Solidity has come to it because of a variety of reasons. Men like to pose as having done wonderful things; they love to tell tall stories in which they may very possibly themselves believe. The bear is big and formidable-looking. He is capable of and does put up a fight when fighting seems to him necessary. A number of people have been killed in encounters with him, and a larger number have been mauled. As a consequence his reputation for ferocity *among the town-dwellers and among the occasionals* in the out-of-doors, has grown to such proportions that there actually has been born a strong and dangerous sentiment for deliberate extermination.

For a time that sentiment was influential. Now, while it is in some quarters as strong as ever, I think it will not prevail. But the drawing of its fangs has been a difficult job. It had to be shown conclusively, by the experience of many men, that the Alaska brown bear will fight only when he thinks he has to; that he never attacks without provocation; that the men most habitually in contact with him are neither afraid of him nor molested by him. The occasions of attack are much fewer than is believed. The bear is naturally a peaceful, a curious, and a dignified animal. He has no desire whatever to fight or attack; he wants to satisfy himself as to what it is all about; he dislikes intensely to be hurried or hustled or made ridiculous.

I have taken a great deal of pains to get the truth of this matter. I have investigated the circumstances of the few indubitable bear attacks or accidents. I have talked or corresponded with literally scores of those whose business takes them, not occasionally, but

habitually, into bear country. That means timbermen, prospectors, guides, engineers, stream-watchers and the like. I have furthermore gathered the ideas of really experienced sportsmen, naturalists, cruisers, and people like myself who go frequently enough for to see and for to admire. Finally I have myself come into close enough and frequent enough encounters with the beasts to have passed the individual instance to what might be called a well-based opinion. For instance, in four months of last season, I was in close contact with an even fifty; the summer before with thirty-seven; and so on. With a few small modifications, which I shall later mention, we all agree; and the items of our agreement are these:

The brownie will attack when wounded and cornered; as will any other beast, down to and including the rat. The remedy is simple and obvious: do not wound and corner him. That is entirely up to you.

He will sometimes, but by no means invariably, fight for revenge when merely wounded and not cornered. Here too the above remarks apply. No one need to hunt bear unless he elects to do so. Having so elected he should be content to take his chances without whining. But it should be noted that with elementary common sense even such accidents are avoidable; and hundreds of sportsmen, including many women, "kill their bear" as safely as they would kill a cow in a pasture. Indeed, in my opinion, the shooting of these animals is no great feat.

There have been a very few occasions when it has happened that a bear has been wounded and has recovered, and has retained so deep-seated a grouch against the human race that he has turned nasty against some innocent bystander. That is rare; so rare that it may be classed as pure accident. Usually such a beast has learned his lesson and is difficult of approach.

Another and more frequent type of accident has its origin in curiosity. The bear's eyesight is not very good. He wants to know what this strange thing is that has come upon him around the bend of the stream. He stands erect the better to see, and erect he is a huge and formidable looking creature. If permitted an eyeful he drops back to all fours and retires. I have had this happen many times, sometimes as near as ten or twelve yards. So have dozens of others, including such experienced men as John Holzworth, who has photographed over two hundred of them, or Campbell Church, Jr., Wil-

liam F. Finley, and Arthur Newton Pack, whose close-up movies are beyond praise, or Allen Hasselburg, probably the most informed bear man in Alaska, or the scores of stream watchers whose business takes them daily among the bears, and who encounter from one to a dozen of the beasts almost every afternoon of their season. All of them, like sensible men, conduct their business armed; but I have yet to hear of one of them compelled to use his rifle. I myself have had a bear advance deliberately to within just twelve feet—at which I confess I threw over the safety catch—only to stop, raise his nose, sniff at me like a dog, and turn aside, his curiosity satisfied. None of these men sustained attack. The ones who have got in trouble are those who, previously impressed by the ferocity legend, have hastily opened fire, sometimes with inadequate weapons, sometimes with ill aim.

Occasionally also it may happen that an unexpected meeting may occur at a range so close that the bear imagines himself cornered, and so must fight. Bears like to fill up on salmon and then sleep it off in the tall grass. Or one may be met face to face on a trail in the forest. This possibility is emphasized by those who want the bears killed off. A man should be able, they claim indignantly, to go through a country about his lawful business without risking such an encounter. One man interested in timber concessions, but no woodsman, told me he intended to hire hunters to destroy all the bears in order to protect his workmen. His attitude was absurd, but he believed in it; and I think he would do it. Bear would promptly clear out for other valleys once his work had started. And as for the few chance travelers, their remedy is simple. All they need to do is to make noise enough to advertise their presence; rattle a tin can with pebbles in it, or sing, or smash the brush, or shout occasionally when in the few patches of cover that might, just might, harbor a somnolent or distraught bear. I talked with a trail crew that had been for some time working in one of the best bear countries I know. They had seen just one bear in four months, and he was in the distance, departing as fast as he could leg it. No bear hangs around when industrial activity is forward. I myself have carried a little .22 calibre pistol which I have let off from time to time when I wanted to fish and not be bothered with vigilance; and have then never seen a bear, though signs and fresh trails were all over the place.

No, the alleged ferocity will not hold water as an excuse for exter-

mination, anywhere, no matter what the circumstances. True outdoor men are in substantial agreement on that. Occasionally I have found a prospector to disagree; but when I have questioned him I have found his enmity based, not on any feeling of personal danger, but on the fact that the bear will rob his badly placed *caches*. He objects to the simple expedient of making better *caches*. He would rather kill the bear. I find also a curious policy rather than sentiment informing the attitude of the Forest Service. A good many men in that service find, or pretend to find, in the bear a personal menace to themselves, and a considerable number of them make a habit of killing bear when they can. This is bad, for in the long run they can inflict considerable useless damage to the species. The policy is quasi-official. One of the reports even advocates the use of poison in some districts; and considerable space in another report is devoted to the "menace" of these beasts. A man in the employ of the Service was, a number of years ago, killed by a bear. The affair was most unfortunate, but seems to have been a pure accident due to inexperience and the fact that the man was permitted against advice to take the field inadequately armed, with ammunition too light to be of any use in a real emergency. It was unfortunate, as I say; but an isolated and avoidable accident that is no real basis for the policy that seems to obtain. It seems to me that there is here a subject for fair criticism, for the business of a government organization is preservation and not destruction. If that is a subject for serious argument, I would suggest a simple remedy; join the Fisheries and not the Forestry. In the employ of the former bureau are many men, generally old men, whose daily business takes them, not occasionally but daily, up the streams at the time of year when every bear in the district is on the river catching salmon. Not one of them I have talked to is in the least afraid of bear, or has been attacked by bear, and they are in constant intimate contact with the beasts.

So violent became this extermination idea a few years ago that to meet it the game laws were modified in a most dangerous fashion. By new provisions, while the outside sportsman was confined to seasons and a bag limit, the Alaskan was permitted to kill bear at any time and in any numbers. Certain exceptions were made as to certain areas, all in northwestern Alaska, where the native must conform to the same season and the same bag limits as the sportsman; except when, *in his judgment*, the bear was likely to prove dangerous to life

or property. That is certainly a loophole large enough to drive through comfortably! And note that the first provisions threw open the season when all the bear are concentrated on the salmon streams and are easy prey. I myself had I been an Alaskan, and, so inclined, could probably have killed every one of the fifty I encountered last summer.

I should in fairness add that there are also set aside certain areas for preservation. These are small, remote, inaccessible, and wholly inadequate. Last summer the Ten Thousand Smokes reserve was extended to the sea. This is all very well; but that country is remote; it is difficult. One must cross the Gulf of Alaska to get to it. The climate is bleak. The going is rugged. The bear are harder to get at. The expense is considerable.

But in southeastern Alaska are three large islands a few hours south of Juneau, on the Inside Passage, indented with sheltered harbors, easily accessible, and which at this moment contain a comfortably large population of the brown bear. Each season they all descend to the numerous salmon streams where one may cheaply, easily, comfortably see them, study their habits, photograph them. The photographs that illustrate John Holzworth's "The Wild Grizzlies of Alaska" were taken on Admiralty Island, as were the wonderful movie close-ups of Church, Finley, and Pack. Moreover, anyone of average experience and common sense can duplicate them. Others can do likewise by taking a guide and doing as he says. The sight of these huge creatures fishing, bathing, conducting their most amusing affairs, is still to me one of the most amazing and interesting game spectacles of my experience; and I knew Africa over twenty years ago. It is one of the wonders of the world. And it is at our very elbows, so to speak.

That is the difficulty, unless we do something about it, *and do it promptly*. Up to the past few years the bear on these islands were little molested. Local sportsmen were few. Outside sportsmen did not know of them, and went to Kodiak Island and the Alaskan Peninsula. Those game fields were better known; indeed the brown bear was named for the island. The extermination fanaticism had little point, for few had business on these islands.

But lately these conditions have changed; and with a swiftness which few realize. Outside sportsmen are coming in, more and more every year, for the news has gone forth that here one can "get his

bear" with a minimum of expense, of time, and of labor. Parties are dropping in from as far away as Boston by airplane. And as the news spreads, as spread it naturally does even without formal advertising, the number of these parties increases, not by arithmetical but by geometrical ratio. Nobody knows better than I, for I have many times seen it, the promptness with which a newly discovered or newly appreciated game field is overrun and depleted once the process starts. And practically everyone "gets his bear," nor is he satisfied with one only, but shoots his "limit," though why a man should want to kill more than one is beyond me. Were shooting confined to legitimate sportsmen, the stock could not long stand undepleted this sudden and increasing drain on it. I know this statement will be denied by those in authority or those interested, but I stand upon it. In the first place the actual bear census is smaller than is generally claimed. If a man walks up a stream and in an afternoon runs across eight or ten he carries away the impression that the country is literally swarming with bear. I confess it seems so: even one is pretty big and numerous looking! But, it must be remembered, that number represents the majority of the entire population of that particular watershed. It has gathered in concentration for the salmon run. I imagine I have a pretty fair idea of the number of bear in a good many districts. Even doubling my figures does not produce a total that, by plain mathematics, is sufficient to withstand depletion against the increasing toll taken by the legitimate sportsman. That is a careful and a considered statement.

But in addition we have other elements of destruction: the local inhabitant and the casual visitor, for example. A few years ago that element also was negligible. But the smaller outlying islands are being taken up by fox-farmers. The forests are being "looked" to areas hitherto inaccessible. Prospectors are penetrating by means of pontoon planes that leave them and their equipment on interior lakes. And a variety of others. These people are human. Under the present regulation, allowing them to shoot bear in any numbers at any time, they account for a good many in the course of a year. I know of one small bay where I was told last year five were so killed, fourteen in the tributaries of another stretch of water, and so on. Another contributing factor is the visiting yachtsman. When I first began to cruise in Alaska I would often go three or four months without seeing a yacht, and then only in the conventional waterways. Now I am often sur-

prised to find someone anchored in one of my pet out-of-the-way places that I used to consider all my own. These people do not hunt bears as a usual thing; but they are filled to the chin with the ferocity legend; they go armed; and they are likely to be "in danger of attack" if a bear shows its hide anywhere within a hundred yards. The fact that at this time of year the said hides are valueless is beside the point. Some of them may sincerely believe themselves in danger; but I suspect the desire to kill a bear has considerable persuasive power. Within my personal knowledge this happened twice last summer; and I heard of other instances. In any case, the net result is more dead bear. And the yachting is going to increase; should increase; for this is the most wonderful cruising country in the world.

Besides the inevitable and increasingly rapid depletion this represents, there is another undesirable by-product. Wherever bears are killed the survivors become wary and more difficult to observe. Even if, as is stoutly maintained, "no amount of shooting can result in complete extermination," a statement I deny, the final result will be that the opportunities of enjoying, studying, photographing, at present so remarkable, will be rendered so difficult as to be impractical. That to me is important. I may be, academically, delighted to know that beyond the ice-pack polar bears still persist in numbers; but the fact has to me little personal value.

That is the situation. We possess, right now, something unique on this globe; the largest, most interesting, most accessible, most easily observed, studied, and photographed mammal yet remaining in a wild state. We have the opportunity of preserving him in the same accessibility and in sufficient numbers. Are we for once going to take advantage of that opportunity while it still exists? or are we going to run true to form and, too late, spend thousands to restore what we allow to be destroyed?

Now, in spite of the sincere assurances of the Game Commission and other official bodies, I do not believe this can be done by regulation. The reasons for that belief I have outlined in the preceding paragraphs. No matter how we whittle down our permissions to kill, the fact remains that the supply will not, in the long run, equal the demand. It is my opinion, *and it is the opinion of every man who has personally and in the field studied the question*, that if we want to possess this bear *as he is*, both in sufficient numbers and in his present accessibility, for the enjoyments of study, observation, and

photography, we must establish a sanctuary. There are no two ways about it. Either do that, or shrug our shoulders.

Furthermore, again for reasons stated above, this sanctuary should be either Admiralty, Chichagoff or Baranoff island, or sufficient parts thereof. I name them in the order of desirability, from the bear standpoint. Parenthetically: as an offset to this agitation it has been suggested that an extension of Glacier Bay National Monument would answer the purpose. In my opinion it would not. The bear are neither sufficiently numerous *or accessible*.

For two years I have been advocating this. How it is done does not matter. I had thought a national park might solve the problem; and maintained, and do still maintain, that the dollars-and-cents return to the people of Alaska will far outweigh any sacrifice of commercial possibilities. A wilderness area might be proclaimed; or, simply, a game sanctuary. But if it is considered desirable to preserve these bear in southeastern Alaska, one or the other must be done, *and done soon*. I repeat: more regulation of killing will not accomplish.

There is a strong, and a rapidly growing public sentiment in favor of this. But it must make itself felt, *in time*. The points of application are: (1) The Secretary of the Interior; (2) The Biological Survey; (3) the National Park Service; (4) the members of Congress, especially the members of Congress. Senator Wolcott is chairman of the Wild Life Committee, and sympathetic in principle.



ADMIRALTY ISLAND—HABITAT OF THE ALASKA BEAR
Typical of the Proposed Sanctuary Photograph from John M. Holzworth



FURNACE CREEK WASH AND THE FUNERAL RANGE, FROM ZABRISKIE POINT
Photograph by Walter L. Huber

DEATH VALLEY

BY THOMAS H. MEANS

DEATH VALLEY, long known as the hottest, driest, and most barren part of the American Desert, has become a popular winter resort. Tourist bureaus have exploited the charm of desert air and the magnificent scenery so successfully that many persons visit the region every winter and find pleasure in a section of the country where it was once reported that no life could survive, and where even birds flying over the dread pit were overcome by deadly gases.

There has been no change in the country since the days when its legend of deadliness prevailed, but there has been a greater appreciation of desert climate and scenery. Europeans have long visited the deserts of North Africa, and the tourist hotels of Egypt and Algeria have been crowded in winter. So today the American tourists winter in Arizona, Palm Springs, and Death Valley. Good roads and the automobile have extended the area open to the visitor, and it is now possible to see, in comfort and safety, desert lands far distant from the railroads—lands inaccessible in the days of teams and saddle-horses. Our desert regions are destined to become more and more popular. Like the sea or the mountains, the desert becomes friendly and restful to those who know it. The "old-timer" and the "desert rat" with his burros are no longer alone in their liking for the desert.

Death Valley is the lowest place in the western hemisphere, and except for the Dead Sea is the lowest place in the world. The bottom of Salton Sea is within a few feet of the same elevation, but since the Colorado River flowed into the basin that region is out of the competition. Over four hundred square miles, an area eighty miles long, is below the level of the ocean—the lowest place is 280 feet.

The bottom of the valley is a clay and salt flat, barren of all vegetation. Surrounding this is the slope up to the foot of the mountains, debris washed from the higher regions by torrents. The mountains which entirely surround the narrow valley are high, steep, and deeply furrowed. The Panamint Range on the west rises, within ten miles, to a height of 11,045 feet—Telescope Peak. On the east

the Amargosa Range, which is divided into the more familiar names of Grapevine, Funeral, and Black mountains, rises out of the valley like a wall, to peaks over eight thousand feet. Steep slopes furrowed with deep cañons, here brilliantly striped with red and tan and white and there black and somber, characterize both ranges.

The brilliant colors stand out vividly in the clear air; distances are deceptive. The colors change with the light; they are fleeting, and the despair of artists who try to put them on canvas. The light is strong, and the inexperienced photographer is likely to overexpose pictures. The overlying blue of the full daylight changes to purple in the evening, and the shadows become deep purple to black. The rough contours become soft as the sun descends, and the scene takes on a mystical hue and brings thoughts of Arabian Nights. Maxfield Parrish must have derived some of his color technique from the desert.

The desert's influences on casual visitors are toward peace, quiet, and restfulness. The warm, dreamy days promote idleness and naps in the shadows. The evenings are for conversation and story-telling. The finest time of day is just as the sun comes up in golden splendor from behind the eastern mountains.

Besides being the lowest, Death Valley is the hottest place in the country, but that is in summer, when the tourists are elsewhere, perhaps in the high mountains or on the coast watching the waves. Barrenness is another characteristic of the desert, and in this particular Death Valley excels. The things which are so commonly associated with beauty and comfort are almost entirely absent—trees, grass, flowers, water, and society. The lack of rain (the average at Furnace Creek is 1.33 inches in the year) is caused by scarcity of clouds. There is no other place in the country where the sun shines so nearly one hundred per cent of the time. There are some blessings in aridity: dependable weather is one of them; another, trees never obscure the view. In humid countries grass and other vegetation prevent the soil from being washed away as it forms, consequently the accumulation of soil covers up the rocks. Not so in Death Valley. Here when it does rain it rains hard, cloud-bursts rush down the mountain cañons, and the unprotected soil is washed into the valley leaving the rocks bare and stark. The geology of the hills is out in plain view, so that he who understands the science can read the secrets of the strata without digging for exposures.

The very scarcity of plants makes those present the more interesting. Every plant here must be adapted to life in a desert or it does not survive; all have some special ability to live on a small quantity of water, some can resist salt in the soil, others have thorns or barbs to repel browsing animals. Flowers are few and insignificant, except at rare intervals when the rains come at the right season. Then the seeds which have been dormant, awaiting such a time, spring into life and the array of blossoms is bewildering. Mesquite groves make shade and furnish wood for the camp-fire in many places on the valley floor. Aside from these the only trees are the pines on the high ridges of the Panamint Range.

Animal life is not abundant, but the few species which have learned to live in the barren land are like the prospectors—interesting because of their rarity and their unique manner of living. Mountain-sheep are found in the ranges on both sides of the valley. There is probably no region in the United States where there are more sheep than in the Panamint Range. Sheep-paths can be seen on the clay hills at Zabriskie Point. Other animals live around the watering-places. Saratoga Springs, at the south end of the valley, spreads out into a lake and swamp of nearly ten acres surrounded by tules and patches of reeds and grass. Here there is a great deal of life; water-fowl stop off on their migrations, blackbirds, marsh wrens, and coots and ducks fill the tules with life and tuneful gayety. Professor Joseph Grinnell records 124 species of birds, varying in size from humming-birds to Canadian geese. Some of them live here permanently and raise families; others only stop off while traveling. English sparrows, far from their place of origin, live in the palm trees at the Furnace Creek Ranch. Ravens, usually in pairs, seem to follow campers about, always with that hopeful look in the eye that there will be bones to pick. They hoarsely discuss the prospects as they circle around camp.

Death Valley is surprisingly well watered, but this statement is meant in a comparative sense only. There are parts of the American Desert where it is many miles to any known water. Here "old-timers" best acquainted with the region say that there is no place more than fifteen miles to water. Such a statement should not be taken too confidently, because fifteen miles is a long distance for a thirsty man to travel at any time and impossible in hot weather. There is always the possibility of failure in a source of water, and that added to the

difficulty of finding a spring makes it essential that the traveler be always well provided with plenty of water for an emergency.

There are places in the bottom of the valley where sweet water can be reached by digging a few feet. One of the best known—Stovepipe Well—is a spot in the sand where water can be found by digging three feet. During storms sand drifts over and fills the well. The name originates in the old section of stove-pipe once used to mark the best place to dig. Experienced desert travelers always carry a shovel.

Large springs are found in several places; Grapevine Springs, Furnace Creek, and Saratoga Springs are examples. These waters may be measured by the miners' inch or the second-foot. Many others are spoken of in terms of gallons per day, and sometimes the number of gallons is very small. Hole-in-the-Rock Springs has a supply of ten gallons per day, which drips so slowly that the drops can be counted. It has saved many lives.

Channels there are many. They are dry desert washes with water only following rains. Streams there are none, unless we mention Salt Creek in the valley bottom, where it flows through the low hills which separate the north end of Death Valley, sometimes called Lost Valley or Mesquite Valley, from the main or southern arm. The stream is too salty for use. It seems to drain the large area of sand-hills which lie in Lost Valley, and no doubt represents the drainage from the entire desert to the north. Water can be found in many places in the salt bed in the main part of the valley, but it is brine, saturated with salt, borax, and other soluble material.

The springs vary with the season. In 1931 they probably were unusually low because of a period of forty-three months when there had not been a rain exceeding a tenth of an inch. During such a long dry period the water drains out of the rocks, the springs become low, and some of them go dry. Recovery may follow a wet cycle.

The cañons and washes show drift and water-marks high on the rock walls. These indicate the height of floods caused by cloud-bursts. The Amargosa River, which drains five thousand square miles of desert and mountain to the east of the valley, sometimes—rarely—sends a flood half a mile wide to spread over clay and salt. Men who know the desert have great respect for these floods, and never camp in washes even though the skies be clear. Roads which follow the gravelly wash bottoms may disappear overnight, and woe



IBEX HILLS, SOUTH END OF DEATH VALLEY

Photograph by Thomas H. Means



JOSHUA TREE

"It was a brave little tree to live in such a barren country."—*Manly*



CHOLLA

With a reputation for jumping at you, and a good example of "Desert Pavement!"
Photographs by Walter L. Huber

to him who is caught by the slippery mud which flows with the water!

There is a great deal of interesting-looking geology in the Death Valley region. Some of it is so plain that even the amateur may see and interpret it. Other geological features are less evident, but none the less interesting, and with a little help from the more experienced geologist the non-scientific visitor to the region can see a great deal.

Death Valley is a great trough formed by erosion and faulting; either the mountains raised or the valley depressed. Back in Tertiary time the valley was outlined, and early in the Quaternary it seems to have taken on much the form and size it now has. The valley may have existed in its present form for many thousands of years. Geologists do not agree any too well when we attempt to measure their eras, ages, and epochs by years, but few of them would measure the time since the Tertiary period as less than a hundred thousand years and it may exceed a million years.

The rocks in the mountains are old; Paleozoic strata, and early Paleozoic at that, make up the greater part of both the Panamints and the Funeral ranges. The lower flanks of the slopes are veneered with sediments deposited in ancient lakes; below all is the great volume of material composing the *débris* fans of most recent origin. Among all of these deposits there are igneous rocks cutting here and there through and across the strata. Some of the latest volcanics are very fresh and indicate that in comparatively recent times there were little eruptions probably close to some of the great fault lines. At the north end of Death Valley there is a crater, called Ubehebe, looking nearly as fresh as those northeast of Mount Lassen.

Marbles and dolomites, some of them white, others gray and beautifully mottled, make up a large part of the rocks of both ranges. In the Bare Mountains, across the Amargosa Desert from the Panamints at Carrara, there is a similar deposit of marble which is quarried and cut for market.

Interest in geology is not limited to the old strata. Comparatively modern happenings—using the term “modern” in the geologic sense—are of much interest. The story is plainly written, so that even the merest amateur in geologic learning may read. Death Valley was once filled with a lake over a hundred miles long and from five to ten miles wide—larger than any lake we now have in the United States except the Great Lakes. This lake is recorded by beach lines

cut by the waves in the rocks of the mountainsides. The lake was probably coincident with the Glacial period, a time when there was more rain, when ice filled Yosemite Valley and glaciers covered the Sierra summit and slopes.

In the Glacial period the watershed tributary to Death Valley extended from near the top of the San Bernardino Mountains in southern California to the crest of the Sierra Nevada at Mammoth and out into Nevada fifty miles beyond the state line. Eighteen thousand square miles of territory, more than the entire Sierra drainage into the San Joaquin Valley, drained through the streams which flowed into Death Valley.

The Amargosa River from the east and the Mohave from the south together have a larger drainage area than the Sierra slopes from the Kern to the Tuolumne. Water from the melting snow on the north slope of Mount San Bernardino flowed down the Mohave and through a series of lakes, the remains of which are still in evidence, and joined the Amargosa at the south end of Death Valley. Soda Lake and Silver Lake are now large clay flats, but the beach lines high above the bottom of the flat indicate the extent of the lake in the days when precipitation was greater. Other lake beds no doubt existed along the line of the Mohave, and there is no doubt that some of the other valleys of the Mohave Desert, which are now closed off from outward drainage by alluvial fans, once drained through the same streams into Death Valley.

The most interesting relics of the Glacial period are found in the streams of the Sierra which drained toward Death Valley. Owens Lake was once larger than Lake Tahoe and over 250 feet higher than now. Then it emptied through Haiwee Pass into Indian Wells Valley by way of Little Lake. A small lake was formed in the east end of Indian Wells Valley and the water passed through Salt Wells Cañon to Searles Lake. When Searles Lake was at its best it was over six hundred feet deep and twice the area of Lake Tahoe. At this level water backed up into Indian Wells Valley, leaving Salt Wells Cañon as a narrow strait. The record of this fossil lake is cut in the rock of the surrounding mountains in the form of beach lines which can be seen on many of the slopes.

The ancient Searles Lake drained through a pass at the south end of the Slate Mountains into Panamint Valley, which was the third lake in the series. Panamint Lake must have been a beautiful

sight. It was about a thousand feet deep, and consequently the water was very blue. It was a hundred and twenty-five miles long, with an area exceeding Tahoe and surrounded by rugged mountains—on the east the Panamints rose to a height of over eleven thousand feet while the Argus range on the west was nearly nine thousand feet. The fossil Panamint Lake, like the other lakes of the series, wrote its record in the rock of the mountains. At its highest level Wingate Pass drained the water into the south end of Death Valley—the inland sea from which all these waters evaporated. This inland ocean must have been over three hundred feet deep, but erosion has been so active that it is not certain that the highest of the beach-lines has been found. The best beaches so far discovered are those on the basaltic hill a short distance south of the mouth of Wingate Pass. When we know more of the ancient Death Valley Lake we will no doubt be able to trace the rise and fall of the lake level and learn more than we now know about the climate of the time. We may find the fossil remains of animals that roamed the shores of the lakes and of the trees and plants growing on the land.

We now have enough information to make an approximate estimate of the climate at the time the series of lakes was in existence and the ancient lake in Death Valley was at its highest. Since there was no outlet to these waters, evaporation from the lake area balanced the inflow. We know the area of the lakes and can estimate the amount of water removed by evaporation. The State Engineering Department has recently made extensive studies on the relation of run-off to rainfall. If the same relation held in glacial time, the rainfall would have to have been about three times as great as now to maintain these lakes. Three times the present rain would cause great glaciers to reform in the mountains, and would give Owens Valley about the same rainfall as Sacramento. The desert valleys around Death Valley would have about the same rainfall as the Sacramento Valley, and we would expect to see the same vegetation. Forests would cover the mountains. The region around Klamath Falls, in Oregon, where there are great lakes surrounded by forest-covered mountains, is about as near a counterpart as one can imagine.

No doubt the lowest of these lakes, the inland sea in Death Valley, varied in level with the fluctuations in wet and dry cycles. The final desiccation of the region seems to be a comparatively recent

occurrence—maybe a hundred thousand years ago. We have no way of knowing that the swing may not now be toward increased rain and the reestablishment of these lakes. One thing we can be assured of is that the change will be too slow for us to measure. Our measuring stick is less than a hundred years—but a moment in geologic time.

The most impressive scenery in Death Valley is due to large movement along fault-lines. The central part of the valley is bounded by faults which have a "throw" of nearly a mile. The steep west front of the Funeral and Black mountains results from the mountain block being raised. This seems to be still in progress, because some movement has gone on so recently that the erosion has not had time to bury the cliff which has been formed. Panamint Valley has fault-scarps of recent origin, and in other places throughout the entire region there are evidences of small slips which remind one of the Owens Valley fault which moved as recently as 1872.

Mr. L. F. Noble, in the Carnegie Year Book, 1926, has this to say of these faults: "They are interesting because they exhibit evidences of movement as recent as those which have taken place upon the San Andreas rift, because parts of these huge scarps are fresher than any other scarp of similar magnitude in the West and because they exhibit a number of peculiar features whose significance is not yet understood. These faults deserve the closest study. When they are better known to geologists they will undoubtedly constitute one of the classic geologic features of Western America."

The history of man's activities in Death Valley are no less interesting than nature's doings. This is hardly the place to tell much of history, but one event in the exploration of the West is worth mentioning. The first known entry of white men into Death Valley occurred in December, 1849. A party of gold-seekers reached Salt Lake City too late in the season to attempt the crossing of the Sierra, for the terrible story of the Donner party and its disaster in 1846 was fresh in the minds of all emigrants of those days. These gold-seekers, under the guidance of a Mormon, decided to avoid the danger of winter in the Sierra by using the then little-known trail to Los Angeles, which follows roughly the route of the Union Pacific Railroad. Somewhere near the Nevada-Utah line, on the advice of some hunters, a part of this wagon-train started directly west toward the most arid region. After much scattering of the party and many



THE SOUTH END OF DEATH VALLEY, FROM DANTE'S VIEW

Photograph by Walter L. Huber



THE SALT FLAT, IN THE LOWEST PART OF DEATH VALLEY
Photograph by Walter L. Huber

difficulties and hardships, the bottom of Death Valley was reached—provisions nearly exhausted, animals and outfits nearly worn out, and the wall of snow-covered Panamints many thousand feet high in front of them. In desperation outfits were abandoned and only the little that could be packed on oxen's or men's backs was saved. One party, lead by a man named Bennett, crossed the salt flat and camped at the base of Telescope Peak, probably near what is known as Bennetts Well. The first attempt to cross the mountains failed, and the conference around the camp-fire that night resulted in the selection of William Manly and John Rogers as scouts to go for relief. Manly and Rogers went on foot across the Panamint, the Slate, and the Argus ranges, with a few pounds of dried meat from one of the oxen, and not even a suitable canteen, but, by great luck in finding water, they reached Indian Wells, a spring at the base of the mountains on the west side of Indian Wells Valley. There they found a well-marked Indian trail which they followed through Red Rock Cañon out into the Mohave Desert. They crossed the desert and over the pass now followed by the Southern Pacific Railroad and reached help at a Spanish cattle-ranch near what is now Newhall. They then visited San Fernando Mission, bought wheat and beans and horses, and started back for the men, women, and children left in Death Valley. The round trip of 410 miles was made in twenty-six days.

The three journeys on foot across this unknown desert make one of the most heroic stories of our pioneer days. Manly's story, "Death Valley in '49," should be read by everyone interested in Western exploration. The dramatic relation of this trip of two young men who took their lives in their hands to cross the unknown desert to secure aid for their comrades left in despair, camped among the mesquites at the base of Telescope Peak, is a story of true heroism. The return to the camp after an absence of twenty-six days, their thoughts as they approached the apparently deserted wagons, and the joy of finding their friends alive and well, is a climax to heroic effort. Then, when the oxen are packed for the dash to the coast, comedy enters the story, and the oxen stage a bucking contest which will be appreciated by everyone who has traveled with a pack-train. Heartened by the good laugh the party moves forward, and finally, after much hardship, but without loss of a member, it reaches civilization in southern California.

Professor John E. Wolff, of Pasadena, has recently traced the route of this journey across a part of the desert, and soon the exact location of this route will doubtless be known.

Manly's name should be associated with some part of Death Valley. W. A. Chalfant, of Bishop, that fine chronicler of desert doings, author of the most authoritative book on the region, "Death Valley: The Facts," has suggested that a prominent peak in the Funeral Range be named after Manly. Why not, following the precedent of "Lake Bonneville," call the prehistoric lake which once occupied Death Valley, "Lake Manly"?

AN ASCENT OF POPOCATEPETL

BY NEWTON H. BELL



POPOCATEPETL is neither the highest mountain in the world nor is it the most difficult to climb; but, for me at least, the name has always held a singular fascination. It means "Smoking Mountain," for "The Popo" is an active volcano. The height is 17,876 feet, being only exceeded in altitude in this continent by the neighboring Pico de Orizaba and by the peaks of Alaska.

Mexico, the land of Toltec and Aztec and Conquistador, had always appealed to me as the home of romance. As a boy I had dreamed of climbing Popocatepetl, but the opportunity did not come until this year. Leaving the Sierra Club at Tuolumne Meadows after two delightful weeks on the "High Trip" of 1931, I proceeded directly to Mexico and found myself in Mexico City early in August. Phil Bernays, president of the Sierra Club, had given me a letter of introduction to Otis McAllister, founder and president of the Club de Exploraciones de Mexico. He welcomed me cordially, and through his courtesy I became acquainted with several of the most distinguished mountaineers of the republic, particularly Señor Benjamin Cardenas, Señor Francisco Soto, and Señor Joaquin Legorreta.

Notwithstanding the unsettled condition of the weather, Señor Cardenas organized a party of five to make the ascent of Popocatepetl over the week-end of August 15th and 16th. The morning of the 16th found leaden skies and threatening rain. We left Mexico City early in the morning and went by car to Amecameca. The road wound its way through fields of nodding corn and patches of *maguery*, from which the Mexicans make the milky *pulque* and the fiery *tequila*. We passed the rich Hacienda Santa Barbara of Ex-President Calles, the ancient town of Chalco, with its lovely old church of blue and yellow tile, the picturesque crater of St. Catherine, and the truncated cone of the dead volcano Xicle. Larks were singing in the fields and the roadside was often white with amapolas, the delicate poppies of Mexico.

Amecameca, Aztec for "Town built upon a town," is a typical Indian village, the men wearing wide *sombreros* and gaudy *zarapes*

and the women with their brightly colored *rebosos*. Laden donkeys, patiently plodding through the streets, and swarms of pariah dogs completed the picture. Here Felipe Perez, the *contratista*, was awaiting us with horses for the journey to Tlamacaz, a mule to carry our blankets and supplies, and two Indian *mozos* to act as packers.

The ride to Tlamacaz consumed five hours. At first, the path followed an old watercourse with smiling fields on either side and wild flowers blooming everywhere. Many of the flowers were unfamiliar, although I noted the wild purple morning-glories and the bright red of the pentstemon, with occasional beds of lupine, that old familiar friend of the High Sierra. The ascent was gradual, and, leaving the watercourse, we passed through a heavily wooded region and on over black lava-beds, finally reaching Tlamacaz with the darkening twilight. Our *mozos* turned the horses out to graze in the deep grass of a near-by meadow, and we lay down to rest in a dry arroyo, where shelter was provided against possible inclement weather. The shelter consisted of a series of caves, with dry grass to soften the hardness of the earth on which we were to sleep.

In the short twilight we were hurriedly preparing our supper, when suddenly I heard a cry from Cardenas, "Look, look! You can see the Popo!" And looking up I saw the great wall of fog breaking and the snows of the mighty volcano coming into view. As if by magic, the thick curtain of gray was vanishing before our eyes, and in a few minutes, like a great white ghost emerging through the gloom, Popocatepetl stood before us in all his majesty and grandeur, etched against the dusky blue of the sky. The spectacle was overwhelming. The towering mass of snow and ice seemed literally to touch the heavens. A tiny cloud hovered over the summit, pale and ever-changing with the wind. It was the breath of the volcano, for Popo is alive and the cloud was his smoky breath issuing from the crater. As we watched, the twilight turned to night, for darkness comes quickly in the southern latitudes. The stars came out one by one, and soon the sky was bright with millions of tiny twinkling points.

In the meantime the two Indians had prepared a roaring fire. Supper was now ready, and, with that insatiable appetite experienced in high altitudes, we devoured I know not how many varieties of food. The repast consisted of fried chicken, tinned fruits and vegetables, various cakes and pastries, all washed down by rich red

Spanish wine imported from Malaga. The *mozos* piled more wood upon the fire, and, while the faggots crackled and sputtered and the roaring flames lighted up the darkness of our arroyo, my Mexican companions sang lilting Spanish melodies far into the night. And as they sang, I lay watching the constellations march slowly across the sky. Finally we abandoned the warmth and friendliness of the fire and crept into the cave for a few hours of fitful sleep. The night air was cold and penetrating. We huddled together like sheep, seeking the warmth that only bodily proximity can give in such circumstances.

At three o'clock I was awakened by a shout of "Vamonos!" and, dragging my cramped and weary limbs to the fire, I spent the next few minutes mustering my enthusiasm for the strenuous effort to come. There was no moon, but the pale radiance of countless stars gave sufficient light for us to see the massive outline of Popocatepetl looming up straight ahead. Nocturnal mountain-climbing is not easy, but our leader Cardenas unerringly found the way along the rim of a deep *barranca*, or gorge, at our left; then across it and over vast fields of black volcanic ash. We toiled ever upward in the dark. The stars gradually faded out of the sky.

By the time we reached the snow-line, the eastern horizon was streaked with dawn. We rested, watching the glory of the sunrise. The east was bathed with opalescent fire, violet changing to vermilion and vermilion to orange, yellow, and gold. The sun rose like a great crimson disk, and below we could see the broad plateau of Mexico stretching away into the distance broken by the beautiful Sierra de la Malinche, and far beyond, his base hidden by the mists of the morning, we could see the giant Orizaba lifting himself to a height of over eighteen thousand feet above the level of the sea. The Aztec name for Orizaba is Citlaltepétl, "the Star Mountain." Close by towered the "Sleeping Lady," lovely Ixtaccihuatl, almost as high as Popocatepetl himself. Surely the Ixtaccihuatl is one of the most beautiful of all the mountains in this world. She lies swathed in the white mantle of her eternal snows, slain, according to the ancient tradition of the Aztecs, by the jealous Popo for her infidelity. Orizaba, the Betrayer, looks on in proud disdain, and far, far below, one sees a tiny volcanic cone that the Indians call Hijo de Popo, "the Son of the Popo," born to him by Ixtaccihuatl before he killed her. At the snow-line, we tied spikes to our shoes with leather thongs, put on

dark glasses, and covered our faces with thick grease-paint to protect them from the blinding glare of the snow and the fury of the wind.

For over four hours we climbed, securing precarious foothold in the snow and ice by means of spiked shoes and ice-axes. The ascent was slow, but fortunately there were no crevasses to be crossed, and the hard snow beneath our feet held the spikes firmly. It seemed as if we were treading on diamond dust, such was the appearance of the sun shining on the snow as we saw it through our dark glasses. Up and up we climbed; step by step over the glistening snow toward the mysterious crater that seemed slowly to recede as we advanced. In the rarefied atmosphere breathing became increasingly difficult.

The sun, now almost overhead, beat down mercilessly. It seemed as if Tonatiuh, the Sun God of the Aztecs, must surely be resenting the impertinence of this Gringo seeking to conquer the sacred mountain. Only a few hundred feet more to go, but each step seemed to summon the last ounce of my remaining energy. My companions, more accustomed to high altitudes, were almost to the top. I was now able to climb only by mechanically taking ten paces, then lying on the snow and gasping like a fish out of water until strength came back to go on. With a final supreme effort, I dragged myself over the short distance that remained. The crater at last! When breath returned I gazed into the steaming miracle below.

The great oval chasm is over a thousand feet deep. From the depths came a rumbling roar, as if subterranean express-trains were passing beneath our feet. Fissures here and there were emitting steam, smoke, and volcanic fumes. Popo was alive and breathing his monstrous breath into our faces. The heat of the inferno below had melted the snow within the crater, and the walls were saffron-yellow, turning in places to brick-red. On the opposite side, the action of wind and snow had left intricate designs on the crater-wall somewhat resembling the hieroglyphics and esoteric symbols of the Mayas and Aztecs.

Turning away from the crater one could see for fifty miles out across the wide Mexican plateau. In the distance, the sun glittered on the tiled domes of the churches in Puebla and Cholula. The snows below, the lava-beds beyond, the dark wooded patches, the distant fields, the glorious Ixtacihuatl in her white shroud, and the far horizon broken by the peaks of Orizaba and Malinche, gave one

the impression of being in an airplane. We remained on the crater rim for over an hour.

Contrary to my expectations, the descent was delightful and accomplished in an incredibly short time. We simply sat down and proceeded to slide for almost a mile, guiding ourselves with our iron-pointed sticks and avoiding the patches of lava-rock on the way. It was a thrilling experience, although a bit hard on the seat of the trousers. We reached Tlamacaz early in the afternoon, where we rested and had lunch. The Indians saddled the horses and we rode to Amecameca, arriving as the sun was going down. I stopped for one last look at Popocatepetl and Ixtaccihuatl, the twin giants I had come so far to see. The sky was cloudless, and, as the red sun dipped below the horizon, the volcanoes were bright with the matchless beauty of the alpine glow. The sky turned to cobalt, and a pale crescent moon rose while still we watched.

"Adios!" the mountains seemed to say; "Hasta la vista!"—"Until we meet again!"

Then we left sleepy Amecameca and drove back to the City of Mexico, tired, so tired, but richer in an experience that can never be forgotten while life lasts.

It is with the greatest pleasure that I pay tribute to the mountaineering skill, physical stamina, and unfailing good-nature of my Mexican companions. The success of the trip was entirely due to the expert leadership of Señor Cardenas, secretary of the Club de Exploraciones, a great climber, an able organizer, a gracious and delightful friend. May the members of our own Sierra Club some day have the opportunity to meet the members of the Mexican Exploration Club. They would experience a rare hospitality and leave sharing my own enthusiasm for the mountains of Mexico and the men who climb them.

MUIR GORGE IN TUOLUMNE CAÑON

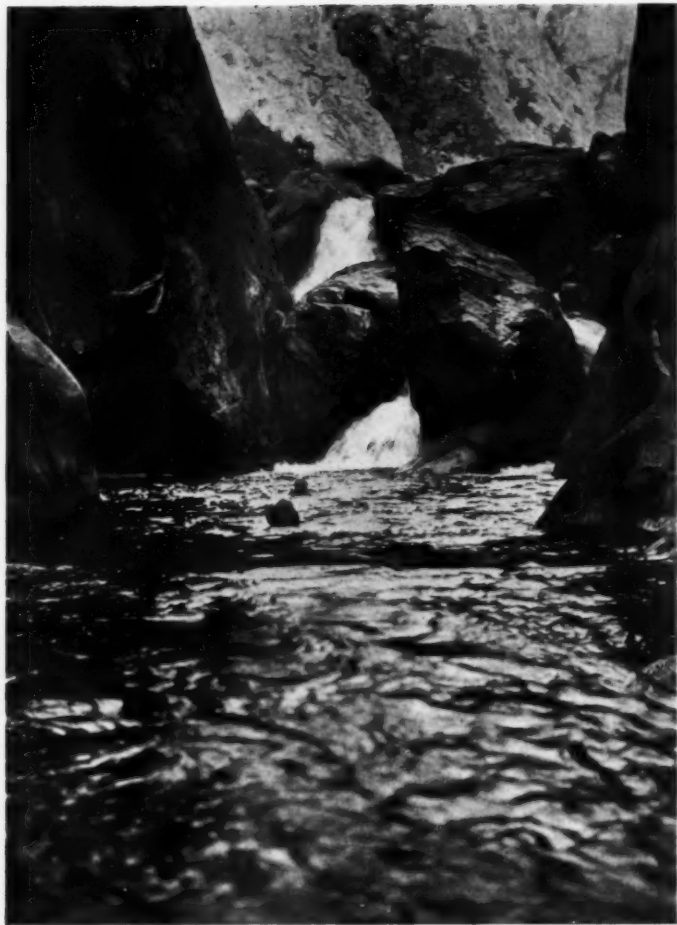
BY FRANCIS P. FARQUHAR

FOR many years Muir Gorge, in the heart of the great Tuolumne Cañon, has remained something of a mystery. Long ago John Muir and Galen Clark passed through it, but, until a few years ago, no one else has been known to do so. Many have gazed at the waterfalls which mark its lower end; and a few have leaped out upon the big flat boulder in the midst of the stream where the waters roar and dance their way down into the unknown half-mile. The trail passes around the gorge, rising nearly a thousand feet to surmount the buttress that forms its north wall. When the water is high it is hopeless to make any attempt to penetrate the gorge. The surging force of the water makes swimming impossible, and there does not appear to be any way of following the walls on either side without climbing far above the stream, so far, indeed, that it could not be said that the climber had passed through the gorge.

Because of the exceptionally low water, the summer of 1931 afforded a rare opportunity for exploring Muir Gorge. Not only was the water low—it was warm, an advantage not always to be found. On July 14th, the Sierra Club outing party moved camp from Glen Aulin to Pate Valley, climbing around the gorge by the trail over the buttress. Not so many years ago this journey itself was considered something of a feat, and a register was kept at the summit of the buttress, where the few who ventured through the great cañon might record their names. Now, a splendid trail built by the National Park Service makes the beauty and grandeur of the cañon available to all who can ride horseback or walk moderate distances on foot. Without giving much thought to preparations, five of us in a very impromptu manner left the trail where it begins to climb away from the river and scrambled down through the alders and over the huge boulders to "have a look at the gorge." The low water enabled us to go without difficulty some distance below the usual viewpoint. Presently, however, we found that casual scrambling was at an end and that careful planning was required. A way was found along the cliff on the left bank of the river, but the three who tried it made



MUIR GORGE, TUOLUMNE CAÑON
Looking down the Gorge from above the Waterfall
Photograph by Nathan C. Clark



MUIR GORGE, TUOLUMNE CAÑON

Looking back toward the Waterfall from Submerged Rock midway in the Big Pool

Photograph by Nathan C. Clark

such slow progress that the other two decided to take to the water. This turned out to be the better course, for soon all scrambling along the sides came to an end and it was "swim, or quit."

The entrance to the inner gorge is startling and dramatic. Crawling out of a shallow pool onto some huge boulders that choke the stream, we beheld one of the finest sights in the Sierra. On either side of the boulders the river plunges down about twenty feet into a deep narrow pool walled by smooth sheer granite. There was no longer any mystery about Muir Gorge; its secret lay revealed, and we marveled at its beauty.

For a time we abandoned ourselves to the enjoyment of our surroundings, but presently it became necessary to consider how we should proceed. It was clear that there was only one course to pursue: we must contrive to get down from the rocks on which we stood directly into the pool and then we must swim the pool for fifty yards or more. That course eliminated one of our party at once, for Jules Eichorn could not swim. Generously relieving the rest of us of our knapsacks and all superfluous clothing, Jules turned back, and with a heavy heart and a very heavy pack climbed out of the gorge to the trail. The four remaining, Marjory Bridge, Glen Dawson, Walter Brem, and Francis Farquhar, with shoes, clothing, and lunch packed in one small knapsack, prepared for the plunge. I had brought a hundred-foot rope, and with this I lowered Glen to the pool, where he found a small rounded rock nearly flush with the water, overhung by the big boulder upon which the rest of us stood. The knapsack was to go next, and I threaded it on the rope and called to Glen. The roar of the water caused a misunderstanding and Glen let go his end of the rope just as I released the knapsack. Into the waterfall it plunged and was lost to sight. It failed to appear, and we gave up hope of seeing it again, wistfully gazing into the turbulent waters which held our lunch, our protection from sunburn and scratches, and our even more indispensable shoes. As there was nothing to be done about it, I proceeded to lower Bubs (Brem) and Marjory. At this moment there was a shout from below, and there was the knapsack floating away in a swirl of the pool. Bubs promptly rescued it and the day was saved. As there was no one to lower me, and as there was no suitable belaying point for roping down, I threw down the rope, crawled a little way down the rock, and dived into the pool.

From that point on, there was no problem. There was no alternative but swimming and scrambling over boulders, and joyous sport it was. We swam five pools before coming out at the lower end of the gorge, where we ate our slightly soggy luncheon and basked on the rocks in the warm sun.

The following day, prompted by our enthusiastic reports, another party of four went through the gorge. Morgan Ward, Nathan Clark, Julie Mortimer, and Alice Carter left camp at Pate Valley, returned up the trail to the head of the gorge, and swam through in much the same way as we had done, excepting that Ward lowered the others down through the waterfall at the right of the big boulder and dived in from the head of the fall instead of from the rock. Nathan Clark carried his camera in a waterproof bag and secured a series of photographs, several of which are reproduced in this number of the BULLETIN. So far as we know these are the only photographs that have been taken of the heart of the gorge.

Inquiry into the records of John Muir's travels yields very little specific information about his passage of the gorge. Muir gave very little attention to dates and his pocket note-books are often extremely puzzling. Through the kindness of Dr. W. F. Badè I have been able to examine these note-books and have gleaned a little information about Muir's trips through the Tuolumne Cañon. In August, 1869, his "first summer in the Sierra," Muir followed the river from the meadows to the head of the cañon.* In September, 1871, he entered the cañon near the middle, from the head of Yosemite Creek; and in November, 1871, he entered the cañon about two miles above Hetch Hetchy and came out at the lower end of the valley. His trip through the gorge appears to have been in July, 1872, for in that month he went to Hetch Hetchy with Galen Clark, Merrill Moores, and A. W. Wells, of Oakland. Leaving the horses with Moores, the others "pushed up the cañon to the head of the second grand cascades." At the end of September, 1872, Muir entered the cañon by the "twin peaks and a side cañon," and, on October 2d, "followed the great cañon to Big Meadows at head, thus completing view of all the cañon from Hetch Hetchy to head." In June, 1873, with William Keith and Albert Kellogg, he entered the cañon above the gorge and ascended to near the Soda Springs. In 1877 and in 1889 Muir

* See, also, "The Great Tuolumne Cañon," by John Muir, in *Overland Monthly*, August, 1873, p. 140.

visited the upper cañon, but did not descend as far as the gorge. In August, 1895, he went through the cañon, alone, from Tuolumne Meadows to Hetch Hetchy, passing around the gorge. The only occasion disclosed by these note-books upon which he actually passed through the gorge was in the summer of 1872; and it is undoubtedly this occasion to which he refers in his memoir of Galen Clark, first published in the *SIERRA CLUB BULLETIN*, later reprinted with slight revisions in his book, "The Yosemite."* There is no detailed account of how the three men made their way up through the gorge, but the narrative leaves no doubt as to their having done so:

In the morning of the second day out from Hetch Hetchy we came to what is now known as the Muir Gorge, and Mr. Clark without hesitation began to force a way through it, wading and jumping from one submerged slippery boulder to another through the torrent, bracing himself with a stout pole. Though then at a time of rather low water, the roar and swift surging of the current was nerve-trying. I managed to get our adventurous tourist [presumably Wells, mentioned in the note-book] safely through the gorge by lending a hand at the wildest places, but his inexperience, naturally enough, proved too much, and he informed us that he could go no further.†

Leaving Wells at the head of the gorge, Muir and Clark pushed on to the foot of the upper cataract, returning after dark. The following morning they "crossed over the ridge through which the gorge is cut," and kept on down-stream.

It is not until some twenty years later that there is another definite record of anyone penetrating the cañon as far as Muir Gorge, although it is said that J. M. Hutchings made a trip through the cañon at an early date.‡ In the summer of 1892, Robert M. Price and Louis de F. Bartlett knapsacked down the cañon:

Late in the afternoon we reached the sheer-walled gorge which Mr. Muir had told us we would find about half-way down the cañon. A glance showed the uselessness of attempting to continue near the bed of the river, so we took to the hills, clambered over a ridge about twelve hundred feet high, and at dark reached the river again just below the gorge.§

* *SIERRA CLUB BULLETIN*, June, 1910, vii:4, pp. 215-220; "The Yosemite," by John Muir, 1912, pp. 240-248.

† *SIERRA CLUB BULLETIN*, *loc. cit.*, pp. 216-217.

‡ Theodore S. Solomons, in *Appalachia*, November, 1896, viii:2, p. 165.

§ Robert M. Price, in *SIERRA CLUB BULLETIN*, January, 1893, i:1, pp. 14-15.

Two years later Price repeated the trip through the cañon from Soda Springs to Hetch Hetchy, accompanied by Walter S. Brann, William E. Colby, Ernest C. Bonner, and Leon M. Solomons:

The sheer-walled gorge is about four and one-half miles below Return Creek. It is the only impassable barrier in the cañon; and even here, when the water was very low, Mr. Muir found his way through. . . . To realize thoroughly the impossibility of passing through the gorge, it is only necessary to climb out on a huge boulder at its mouth, and take one glance at that roaring, rushing mass of water. We named this gorge Muir Gorge, after Mr. John Muir, the first man to go through the cañon.*

Following this party a few weeks later Theodore S. Solomons and Leigh Bierce went through the cañon. They, too, stood on the giant boulder at the head of the gorge and gazed with awe at the spectacle, and they, too, climbed around over the buttress.†

In 1897, Robert M. Price and Mrs. Price went through the cañon:

Just before noon, from the terrific rush and roar of the water, we knew we were approaching the Muir Gorge, where the angry river . . . transforms itself into a hissing, seething mass of churning water. Fascinated, we stood on a great boulder and watched the frothing water hurl madly past into a veritable prison of granite.‡

So ends the early record of Muir Gorge. Visitors to the cañon increased in numbers and many looked upon the portals of the gorge. Then, in 1915, the passage was made again. No account has hitherto been published, but in a recent letter Charles Michael describes his adventure:

My first trip through Muir Gorge was made late in August, 1915, about August 28th, I think. Enid [Mrs. Michael] waited at the upper entrance of the gorge while I went through. The water was not so low, and I was forced to swim back and forth across the river several times before I reached the waterfall. When I started through the gorge I had in mind coming back over the hump, but at the fall there was a great tree lodged against the wedged boulder, and, as it turned out, this tree decided me to come back up the river. The trip down through the gorge was quite simple. Coming back I had the current to buck and the tree to

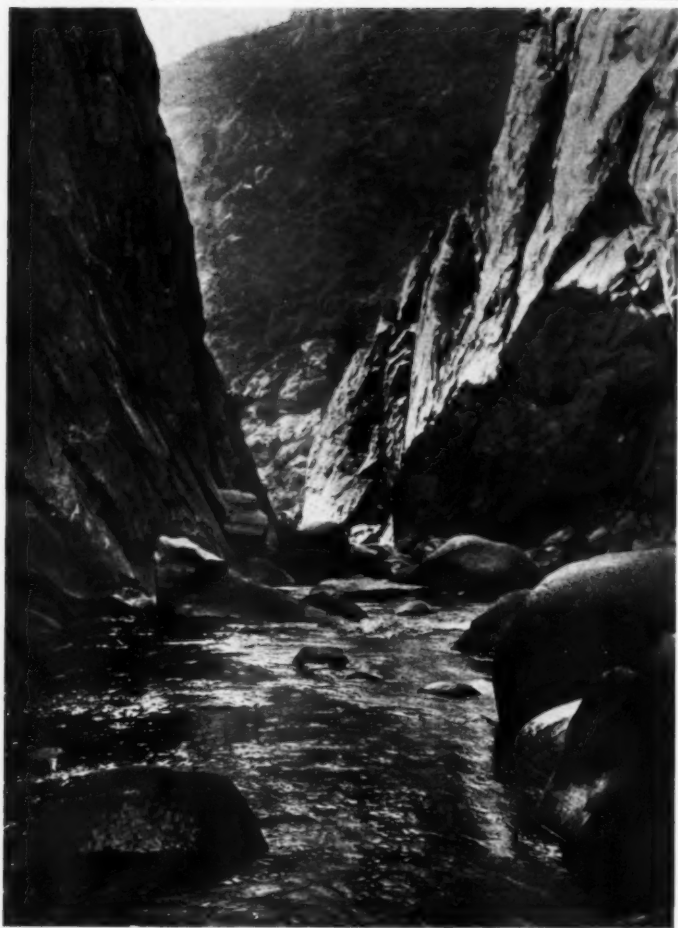
* Robert M. Price, in *SIERRA CLUB BULLETIN*, May, 1895, I:6, pp. 205-206.

† Theodore S. Solomons, in *The Traveller*, San Francisco, December, 1894, IV:6, pp. 88-89; and in *Appalachia*, November, 1896, VIII:2, pp. 164-179.

‡ Jennie Ellsworth Price, in *SIERRA CLUB BULLETIN*, January, 1898, II:3, p. 181.



MUIR GORGE, TUOLUMNE CAÑON
Looking down the Gorge from the Waterfall
Photograph by Nathan C. Clark



MUIR GORGE, TUOLUMNE CAÑON
Photograph by Nathan C. Clark

climb in the face of a rather brisk shower of falling water. I have no notes on this trip, but, as I remember, it took me about twenty minutes to go down and about one hour to come back.

In September, 1926, Mr. and Mrs. Michael made a remarkable passage of the gorge, going up stream. The following extracts are from Mrs. Michael's notes:

On the morning of September 27th our duffel was gathered together and compactly stowed away in the bottom of the oil-skin sleeping-bag cover; then it was rolled tightly and secured with the pack straps. All our possessions except the clothing we wore, the Kodak, and an eight-foot square of oil silk were included in the pack. A hundred yards of scrambling over the river boulders brought us to the mouth of Muir Gorge. The walls here stood forty feet apart and the water of a great green pool, fifty feet long, lapped the walls on either side.

Upon the sunny margin of the pool we paused and stripped for action. Our clothing was bound in a neat bundle and securely wrapped in oil silk. One pack weighed about thirty pounds while the other was perhaps twelve. With these packs on our backs we slipped gingerly into the ice water and started for the further shore. Once in the water we could feel the weight of our packs lift, and after a swim of about twelve feet we were able to touch bottom. When the first boulders were gained that lifted above the surface we paused for a moment and then again slipped in for a second short swim, this pool being but half the length of the first. And then it certainly felt good to crawl out on the hot boulders in the sunshine. Now fifty yards of scrambling over boulders brought us to a third pool and once more we towed our packs across deep water. Then rounding a turn in the chasm a sight met our eyes that I shall not forget. Lying between sheer walls, walls that drew together till they seemed to touch, lay a smooth green channel fifty yards long. Never had I seen such a pool and I was thrilled and uplifted by the beauty of it. The pool lay in a graceful curve back to where a wedged boulder divided the stream into twin waterfalls. Deep green and with surface unbroken, the pool might be fifty feet deep.

As on the day before, we looked about for a route that would take us around the pool, but even the skillful cliff climber Charles could discover no way on those stern walls. Just below the chasm a pile of driftwood was balanced on the boulders. From this pile we chose a bleached trunk of

a tree with three upward turned forks which we decided to utilize for a raft. We placed our packs on the forks and secured them with a string. When all was in readiness we gave the raft a mighty shove and followed it into the water. The current in the pool was barely perceptible, and catching up with the raft we shoved it ahead of us and made the best time we could to the upper end of the channel. At the head of the pool, between the waterfalls, a flat-topped boulder lifted just above the surface of the water. We tried to crawl out onto this, but shivering and numb as we were, this was difficult. The water-washed boulder was slippery under our wet hands and the water about it was deep. My companion contrived to give me a shove and with this boost I squirmed out onto the stone. After both packs were safe upon the flat stone, we looked about for a way to the top of the wedged boulder. It was a roundish boulder about twenty feet high and its curved and polished sides were not to be climbed. Wedged in the corner beyond the left waterfall a huge log leaned against the wall in an upright position and offered a possible way up. Charles swam over to the log and succeeded in looping a stout string over the lower limb. I joined him, and with his help and the aid of the string, squirmed upward till I could grasp the limb; then I was all right and found no difficulty in reaching the top of the wedged boulder. Returning to the packs, Charles fastened the string to one and then the other and I pulled them to the top of the wedged boulder. Then Charles scaled the slippery pole and our troubles were at an end. For here the gorge widened and there lay before us a chain of pools separated by scattered boulders. Pools that could be skirted without wading.

At least one other passage of Muir Gorge has come to my attention. Bob Sovulewski, while engaged in working on the trail a few years ago, went through alone, his movements hastened by a thunder-storm which threatened to imperil him with rising waters. There may well have been others who have looked upon the superb scenery of the gorge, for there are many travelers in the mountains who go their ways and say nothing about it. But the thrill of the great pool will, for some time, remain a rare experience, for not often do such favorable conditions occur as those that prevailed last summer.

THE WILD JACKASS AND HIS SONS

BY ELMO A. ROBINSON

TO hurl the epithet, "Sons of the wild jackass," doubtless implies an intention to arouse resentment in the minds of those who serve as targets. But both the resentment, if produced, and the intention, if correctly diagnosed, indicate an utter misconception of the actual character of the wild jackass himself as well as of his more civilized progeny.

Poets, senators, translators of the Bible, and the profane speak of the animal in question as an *ass*. A more common and a more polite term is *donkey*, which is pronounced *dunkey* by teachers of English and *dawnkey* by the rest of us. Here in California we are likely to prefer the Spanish *burro*. This may be rolled out to something like *ber-r-r-rah* by the packers of the Sierra, or facetiously converted to *bureau* by those who for the first time and with amazement behold the capacity of one of these animals for having objects piled on his top shelf. The popular conception of a donkey pictures him as a beast smaller and less attractive than a horse, with large ears and a small intelligence quotient, whose favorite amusement is to roll in the dust and whose pet aversion is crossing a stream. His name has become a synonym for stupidity. To call a man a donkey is to call him a fool.

As one who has walked fifteen hundred miles of mountain trail with assorted burros as my companions, I wish to protest against such slurs upon the reputation of these friendly beasts. Their ancestry is as ancient as that of the proudest aristocrat. They are related to the horse and are a kind of cousin to the zebra. Some old war-horse may indignantly assert, "You can't make a donkey out of me," but this cannot destroy the probability that the burro of today is correct in tracing his lineage to an ancestor which he shares in common with the horse. The leopard may not change his spots, but the burro did lose his stripes, except for the persistence of vestigial markings, especially on the legs. The deserts of Africa were his early home. Here he became desert-gray in color, learning to live on dry fodder and to feel out of place in water.

In Africa and Asia there are various species and varieties of donkeys, differing in build and color. Unlike the tame animals of today, all these unconquered forbears are exceedingly swift of movement, the symbols of unhampered wildness. To hunt them is considered fine sport. In mountainous regions they frequent high elevations, fourteen thousand feet or more, where they live on the dry grasses. A much quoted passage from Samuel Baker's "The Nile Tributaries of Abyssinia" asserts that "those who have seen donkeys in their civilized state have no conception of the beauty of the wild and original animal. Far from the passive and subdued appearance of the English ass, the animal in its native desert is the perfection of activity and courage; there is a high-bred tone in the deportment, a high-actioned step when it trots freely over the rocks and sand, with the speed of a horse when it gallops over the boundless desert."

Is it strange that the Book of Job bursts forth:

Who hath sent out the wild burro free?
Or who hath loosed the bonds of the swift burro,
Whose house I have made the wilderness
And the salt land his dwelling-place?
He scorneth the tumult of the city,
Neither heareth he the shoutings of the driver.
The range of the mountains is his pasture,
And he searcheth after every green thing.

The burro was first domesticated by the Egyptians in the days before the horse and camel. Five thousand years ago they carved into their records the picture of this servant of homely tasks and fellow-laborer in the erection of the Pyramids, whose sure-footedness and patience made him an invaluable assistant. Moreover, the milk of burros was a valuable food, and animals with beautiful white skins were prized by the wealthy. It is sometimes claimed that one of the Egyptian religious sects centered its worship about the burro. A more usual reward for serving mankind was abuse. It was in Egypt that the head and ears of a donkey became the symbol of an ignorant person.

In the Old Testament the burro comes into his own. Abraham and Job could point with pride to their wealth in livestock — camels, sheep, oxen, donkeys, and slaves, but no horses. In the patriarchal and semi-nomadic days horses were known only from the invading armies. Their adoption by the Israelitish armies was strenuously opposed by the peace party—"A horse is a vain thing for safety." "Woe to them that go down to Egypt for help and rely on horses."

But Solomon disregarded warnings and rebuke. Forty thousand stables of horses he is said to have had.

On the contrary, the burro was never associated with warfare by the Jews. Instead, he was a common animal used by all classes and connected with ideals of peace. Moses (not the Senator, but the man who made the Ten Commandments famous), together with his wife and child, journeyed to Egypt by burro. Jair, a judge in Gilead, was rated as the governor of thirty cities, thirty sons, and thirty burros. Joseph's brothers used burros to carry home their grain. Saul's political advancement began when he was searching for burros strayed from his father's flock. The ethics of the day required that if one met a stray burro it must be returned, even if the property of an enemy, for it was not permitted to covet a neighbor's burro any more than his wife. Cessation of work on the Sabbath was partly for the purpose of giving one's burros a rest.

The most delightful donkey story of the Bible is that of Balaam and the Burro—a story which reveals both human nature and burro nature. Bishop Butler once became eloquent on the character of Balaam, apparently overlooking the equally interesting character of his steed. To one who has ever attempted to drive a pack train the picture of Balaam trying to move a stubborn, balky burro is only too familiar. Often on a difficult trail one uselessly expends precious energy attempting to cudgel and persuade a donkey to go one way when he prefers to go another, only to discover what Balaam discovered—that the burro is sometimes wiser than man.

In fact, he is a creature of much sound horse-sense. His reported feeble-mindedness and obstinacy is the result of ignorant ill-treatment from stubborn drivers.

The birth of Christianity is intimately associated with these domesticated sons of the wild jackass. Mary, traveling with Joseph, rode on the back of a burro, and in a burro's stall was Jesus born. At the climax of his career, in deliberate fulfillment of Zechariah's prophecy, he made his triumphal entry into Jerusalem riding one of these lowly animals, thus dramatically symbolizing to the populace his repudiation of the ideal of a militant Messiah and his full confidence in the victorious power of the methods of peace.

From Egypt the domestication of the burro spread around the Mediterranean world, especially into Italy and Spain and up into Gaul, following the culture of the olive and the vine and replacing

the ure-ox, the bison, and the elk. Sometime after the days of Elizabeth he crossed the English Channel. What the motor car is to our civilization the burro was to that. He drove the mill, drew water from the well, bore produce to market, carried oil, wine, grain, and metals between the interior and the coast. Merchants specializing in transportation kept herds for rental, perhaps on the Drive-It-Yourself basis. In return the burden-bearer demanded no shade, no meadows, no wide open spaces. A little dry feed sufficed. But along with the adoption of the burro himself, the Romans took over the Egyptian prejudices against him. It became a bad omen to meet a donkey. Thus he soon passed into the jokes and proverbs of the common people everywhere.

Once the finest herds were in France and Spain, but later Kentucky took the lead. The donkey's countenance became the campaign symbol of the Democratic party. In addition to his many other services he has contributed milk for tuberculosis cases, and skin for shoe leather and drumheads. When one considers all the presidents and senators who have been elected by the beating of drums, it is certainly bad form for any Republican to speak slightly of the donkey, even though he has lent his portrait to further the designs of the Democrats.

At the present time there are said to be about twelve million donkeys of the non-human variety in the world, of whom about one hundred thousand are in the United States. Of these I have had a personal acquaintance with only twenty-six—too small a number for reliable deductions. Nevertheless, I cannot refrain from a few observations.

The burro is something of an individualist, for no two animals are alike; each has his own curious character. He is a model of patient endurance and willing services, occasionally wandering at night in search of food, but more likely to appear at camp in the morning ready for the saddle, the pack, and the trail. Moreover, the burro in his apparent lethargy is not really lazy. He is merely exercising self-restraint. Sometimes he casts this to the winds in a joyous stampede down the trail, or in an enthusiastic welcome with "loud, unmelodious bray" to a visiting brother of the same lodge. Early one morning at Bullfrog Lake one of my donkeys, thinking himself unobserved, was kicking heels in air in a merry dance around the camp. The moment he detected my eye upon him he made a sudden trans-

formation from wanton jollity to quiet dignity and unconcern. A good burro is capable of emotional self-expression, but he knows how to keep his emotions well in hand.

To a donkey Giosuè Carducci has written a sonnet, which has been thus translated by Maud Holland:

O ancient patience, wherefore dost thou gaze
Across the hedge upon the eastern skies,
Through elder branches, o'er the flowery maze
Of fragrant white-thorn with moist kindling eyes?
Why dost thou bray to heaven with dolorous cries?
It is not Love, O rogue, that woos thy days?
What memory scourges thee? What hope that flies
Spurs on thy tired life down aching ways?
Art dreaming of Arabian deserts free
Where, matched in rivalry of fortitude,
Thou with the steeds of Job didst turn and flee?
Or wouldst thou fly to Hellas' solitude,
Calling on Homer, who doth liken thee
To Telamonian Ajax unsubdued?

"Sons of the wild jackass?" It's a compliment. It suggests noble ancestry, generations of patient and useful service, an important part in the development of Jewish and Christian religion, the symbol of peace and democracy, intelligence, sure-footedness, and self-reliance. If the hundred thousand burros in the United States could vote, perhaps they would raise the caliber of our legislative representation.

SIERRA CLUB

Founded 1892

MILLS BUILDING, SAN FRANCISCO, CALIFORNIA

THE PURPOSES OF THE CLUB ARE:

To explore, enjoy, and render accessible the mountain regions of the Pacific Coast; to publish authentic information concerning them; to enlist the support and co-operation of the people and the Government in preserving the forests and other natural features of the Sierra Nevada.



JOHN MUIR, President 1892 to 1914

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SIERRA CLUB BULLETIN

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REPORTS OF OFFICERS AND COMMITTEES

TREASURER'S REPORT

To the Directors of the Sierra Club:

The following report on the finances of the Sierra Club for the year ended December 31, 1931, is respectfully submitted.

WALTER L. HUBER, Treasurer

Received:

GENERAL FUND

Dues from 308 new members at from \$2.00 to \$5.00	\$1,219.00
Dues from 1718 regular members at \$4.00	6,872.00
Dues for former years	624.00
Dues paid in advance	16.00
Dues at special rates	16.00
Total dues received	\$ 8,747.00
Interest on savings account	95.52
Interest on bonds (portion from Permanent Fund)	92.50
Sale of club pins	20.80
Sale of SIERRA CLUB BULLETIN	120.55
Sale of <i>Place Names of the High Sierra</i>	40.04
Sale of <i>Ramblings Through the High Sierra</i>	438.08
Donation for furnishing new clubrooms	100.00
Partial reimbursement of money expended on	
Muir Shelter in 1930	500.00
Sundry small receipts	11.00
Total miscellaneous receipts	1,418.49
Total received	<u>\$10,165.49</u>

Disbursed:

General Administration:

Salary of Assistant Secretary	\$ 1,380.00
Extra clerical help	190.50
Office rent, Mills Building	900.00
Office expense, postage, stationery, etc.	313.47
Telephone and telegraph	88.67
Election expenses	107.75
Traveling expenses—Directors' meeting	60.00
Storage	112.83
Sundry small expenses	43.58
	<u>\$ 3,196.80</u>
Sierra Club Bulletin:	
Printing magazine number	3,010.87
Illustrations—photographs and plates	318.58
Reprints of article	45.75
Total (forward)	<u>3,375.20</u> 3,196.80

General Fund (continued)

Sierra Club Bulletin (continued):

Total (forward)	\$3,375.20	\$ 3,196.80
Mailing	119.49	
Total	3,494.69	
Less receipts from advertisements	227.50	
Net cost of magazine number	3,267.19	
Printing bi-monthly numbers	240.50	
Mailing	154.30	
Chapters:		3,661.99
Southern California Chapter	950.50	
San Francisco Bay Chapter	406.75	
Miscellaneous:		1,357.25
Library	104.37	
Taxes	67.37	
Purchase of club pins	20.00	
San Francisco local walks schedule	167.69	
Dues to other clubs	27.00	
Contribution to National Conference on State Parks	50.00	
Publication and distribution of <i>Ramblings</i>		
<i>Through the High Sierra</i>	2,953.58	
Additional expense—Muir Shelter	30.00	3,420.01
Total disbursed		<u>\$11,636.05</u>

Summary:

Total received	\$10,165.49
Balance January 1, 1931	4,063.19
Total	\$14,228.68
Total disbursed	11,636.05

Balance December 31, 1931:

Crocker First National Bank	\$ 178.94
Crocker First Federal Trust Company	2,388.69
(Includes Harwood bequest \$1,000 and Seaver bequest \$100)	
Office cash fund	25.00
	<u>\$ 2,592.63</u>

PERMANENT FUND

Received:

Two new life memberships	\$ 100.00
Interest on savings account	166.33
Bequest—Estate of Stephen T. Mather	
Bonds—par value	\$8,000.00
Cash	1,098.51
Total received	\$ 9,364.84
Balance January 1, 1931	6,250.64
Total	<u>\$15,615.48</u>

*Permanent Fund (continued)**Disbursed:* No disbursements.*Balance December 31, 1931:*

On hand in Crocker First Federal Trust Company	
savings account	\$ 5,615.48
Bonds—par value	10,000.00
	<u>\$15,615.48</u>

ROBERT S. GILLETTE FUND

Balance December 31, 1931:

Bonds—par value	<u>\$ 1,000.00</u>
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MEMORIAL LODGE FUND

Balance December 31, 1931:

Bonds—par value	<u>\$ 5,000.00</u>
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LODGE CURRENT FUND

Received:

Income from investments—Gillette Fund and	
Memorial Lodge Fund	\$ 275.00
Balance January 1, 1931	654.00
	<u>\$ 929.00</u>

Disbursed:

Shasta Lodge expenses	565.75
Less contributions	300.00
Net expense	<u>265.75</u>
Salary of Le Conte Memorial Lodge custodian	150.00
Total disbursed	<u>415.75</u>

Balance December 31, 1931:

On hand in Wells Fargo Bank & Union Trust Co.	<u>\$ 513.25</u>
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NATIONAL PARKS FUND

Received:

Interest on savings account	\$ 77.71
Balance January 1, 1931	2,053.53
	<u>\$ 2,131.24</u>

Disbursed: No disbursements.*Balance December 31, 1931:*

On hand in American Trust Company savings account	<u>\$ 2,131.24</u>
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SUMMARY OF FUND BALANCES

Funds:

	Dec. 31, 1930	Net Change	Dec. 31, 1931
General	\$ 4,063.19	— \$ 1,470.56	\$ 2,592.63
Permanent	6,250.64	+ 9,364.84	15,615.48
Gillette	1,000.00	1,000.00
Memorial Lodge	5,000.00	5,000.00
Lodge Current	654.00	— 140.75	513.25
National Parks	2,053.53	+ 77.71	2,131.24
Total	<u>\$19,021.36</u>	<u>+ \$ 7,831.24</u>	<u>\$26,852.60</u>

SOUTHERN CALIFORNIA CHAPTER

Nineteen Thirty-one has been a year of considerable activity in the Southern California Chapter. The big achievement has been the finishing and furnishing of the Aurelia Harwood Memorial Lodge. While the main building was completed in November, 1930, numerous refinements have been made; the kitchen has been enriched with an electric stove, several electric plates, waffle-irons, and toasters. A water boiler has been added so that hot water may usually be had. Screens have been put on most of the windows and doors, and the entire building inside and out has been painted. Numerous couches and benches have been added to make a homey, large living-room. A "pillow shower" netted about sixty cushions that will be useful and ornamental. An outside cooking grill was built by a group of volunteer workers. Much clearing has been accomplished and a supply of wood is provided against the winter's snow. A toboggan slide is gradually taking shape. Stoves have been added to the dormitories.

The lodge has truly become a family club-house for Sierra Club members. Practically every week-end from ten to twenty are there overnight and on a number of occasions there have been from fifty to over one hundred. The fees, 25c for members and 50c for guests, will undoubtedly provide for the upkeep. They have averaged more than \$30 a month the past year. The lodge and furnishings have to date cost about \$9000, but the real value is at least fifty per cent more, owing to the large amount of volunteer work and to gifts of furnishings. Too much credit cannot be given to Peter Van Oosting for his efficient and untiring work in superintending the construction of the lodge and its furnishing, and for the fine achievements of Mrs. Peter Van Oosting, who, as chairman of the Lodge Committee, has superintended the social activities, and in numerous ways had a part in the harmonious conduct of the lodge activities during its first year.

Throughout the year the regular weekly walks have been attended by an average of about fifty. Owing to the almost universal use of automobiles the scope of the chapter's activities has been greatly enlarged. The recent completion of the auto road to Owens Valley has put the foot of the newly constructed Mount Whitney trail within five or six hours' drive from Los Angeles. In fact this road makes accessible for week-end trips twelve of the thirteen peaks in California above fourteen thousand feet, although several of them would make rather strenuous trips.

Most schools of southern California observe a "spring vacation" of the week before Easter. Our chapter usually schedules an auto trip of seven to nine days, and last year the trip was to Hoover Dam and Death Valley. About fifty made it, all in private autos, under the leadership of Paul R. Smith. At the same time a smaller group made a much longer drive to the west coast of Mexico, via Yuma and Nogales, to Guaymas. This was in the nature of a scouting trip to prove the feasibility of taking a larger party later. The most ambitious trip of the year was two weeks via auto to Crater Lake. The party climbed Mount Lassen, visited Klamath Lakes and Oregon Caves, and returned via the Redwood Highway.

All through the year the Friday-night suppers at Boos Brothers Cafeteria,

650 South Broadway, have drawn a crowd of about one hundred and fifty. Ice-skating parties are held every Tuesday evening at the Winter Garden Palace, where the Sierra Club has the exclusive use of the rink from 6:00 to 8:00 P.M.

* *

SAN FRANCISCO BAY CHAPTER

The year just past has been a successful one for the San Francisco Bay Chapter. It has maintained its activities on the same high plane as formerly, and in addition has expanded them in certain directions. It has endeavored to increase the number of educational talks, to bring the activities of the main club closer to members of the Bay region, and to plan trips to new areas, both in the coastal region and in the High Sierra.

During the year under review, the Chapter has prepared schedules of Sunday and overnight trips, varied in locality and in scenic interest. Many of these trips have been regularly on our schedules and are well known to club members. However, there has been an effort on the part of the Local Walks Committee, under the chairmanship of Lewis F. Clark, to plan new trips into our hills and valleys. We take pleasure in recalling the following which were new on our schedule, or which had not been visited for some time: Black Mountain (near Los Altos), Cazadero, Almaden Mines, Butano Forest (east of Pescadero), Berryessa Valley, Lokoya Lodge. On each occasion the climb to the top of a ridge or the exploration of the adjacent country proved most enjoyable.

However, the Chapter has gone still farther in its efforts to carry out the purpose of the club "to explore the mountain regions of the Pacific Coast." In this connection three trips of importance deserve special mention. In May, 1931, a two-day camping expedition to Lassen Volcanic National Park afforded members the opportunity to explore this geological laboratory, as well as to climb two or three peaks, including Lassen peak and crater. In September, a five-day trip to Kennedy Meadows, at the head of the Stanislaus, just west of the Sierra divide, constituted a short "high trip" for 75 members, with pack-train, central commissary, and daily climbs. Horace H. Breed made a most efficient and hard-working manager. To many of us, our beloved mountains in winter time, with their mantle of snow, have a distinct appeal, as strong as their appeal to the summer camper. The snow trip to Cisco last February brought three days of joy in which to explore those hills on skis or on foot.

Our various social activities, making for good fellowship and club spirit, have been most successful. The Entertainment Committee, with J. P. Ferry as chairman, has offered during the year a limited number of dances and parties, each with excellent music and in an attractive hall. Occasional dinners, swims, bridge and theatre parties rounded out our program of social events.

It has been the constant aim of the Educational Committee to keep members of the Chapter in touch with the activities of the club through talks by the directors. During the past year we have been addressed by Walter L. Huber on certain phases of national park work, and by Dr. W. F. Badè on "Reminiscences of John Muir." The Tuesday night dinner meetings at the Bellevue

Hotel have proved to be especially suitable for these informal gatherings. During the year the committee has presented a number of other talks at the Bellevue, including: "The Mountaineers (Seattle) 1930 Outing on Mount Rainier," by L. A. Nelson, President of The Mazamas; "Geology of the High Sierra," by Chas. H. Lee; "Seeing Europe with Wings," by Newton H. Bell; "A Trip Through Africa," by Dr. Kaspar Fischel. Motion pictures or slides have added to the pleasure of these dinner talks, which we plan to continue, about one each month.

The Chapter has kept its interest in local conservation matters and has maintained its usual cordial relations with the Tamalpais Conservation Club. It has sponsored, with other clubs, a "forest conservation" booth conducted by one of the Boy Scout troops at their annual exposition. Members and officers of the Chapter actively co-operated with the club directors in successfully opposing the passage of a new trespass bill, introduced into the last Legislature, which seemed unnecessarily stringent and which might have seriously interfered with walking in the open regions of hill and mountain. LOUIS N. RICE

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LE CONTE MEMORIAL LODGE

The lodge was opened to the public for the year 1931 at the usual date, May 1st. Quite a number of club members dropped in from time to time. It has been customary after the closing of the building, August 15th, to admit on application such visitors to the valley as showed more than casual curiosity, but this season the regular daily hours, with someone at the desk, were continued for a month longer. Some nineteen hundred visitors registered, probably representing about one-third of those who came into the lodge. Camp Curry closed September 10th, yet the daily attendance fell to a minimum several weeks previous to that date, and the extension did not seem to justify itself. The painting of the interior woodwork begun last year was completed with a second coat early in the spring. There was noted an increased interest in John Muir, and his books were in much demand. A book of short stories was donated by Harriet H. Haslett.

FRANCIS C. HOLMAN, Custodian

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SEASTA ALPINE LODGE

The lodge was opened May 13th, or about one month earlier than usual, and closed October 11th.

The total number of visitors was 583, which was a larger number than was recorded in any previous year; of these, 250 registered on the summit. The first registrations on the summit were by a party of four on February 22d.

The summer weather was ideal, the highest temperature being 77° on July 18th and the lowest 29° on June 30th. From then till September 9th we had no frost, although usually we have freezing temperatures every month. From June 15th to September 9th, the dates of the latest and earliest snows, we had no precipitation, which, with the light snowfall of the past winter, caused the grasses and flowers to wither and dry by August. When moisture is plentiful

they remain green and in bloom all summer long. Even the young trees showed dry foliage, and the mountain was barer than ever known, no snow being visible from the lodge. The five glaciers which surround the summit of Shasta decreased perceptibly, being exposed to the sun after the light snowfall was gone, and could be plainly heard two miles away crushing and sliding down. Our only hope is that we may yet again be visited by heavy snows, else Shasta will only be a lofty hill of rock and sand without water and vegetation.

There were a goodly number of visitors at the lodge during the winter of 1930-31, their *marks* being only too plainly visible. In the future it would be well for all intending visitors to apply to the club for their visit on a certain date and thus prevent overcrowding. There is only a floor space 10 x 16 in the lodge during winter, and for one person it is palatial, for two comfortable, but three or four make a crowd, especially as there is only a fireplace to cook by.

Some practical improvements were made during the summer for visitors. A causeway has been built for over a thousand feet, leading from the lodge towards the summit, so that climbers can step from flagstone to flagstone and avoid the rough places. Also the trail leading to the lodge has been changed so as to lead by a good spring, so that it will not be necessary to carry water in going to the lodge. The spring is slightly over five miles from town.

In conclusion, I wish to extend my thanks to all the visitors who paid so liberally for what accommodations they received, and I trust if they ever revisit they will find their givings used for improvements that will benefit all, the payer and "piker" alike.

Receipts:

Sierra Club	\$265.75
Mount Shasta City Chamber of Commerce	100.00
San Francisco Chamber of Commerce	25.00
Placer County Board of Supervisors	25.00
Shasta County Board of Supervisors	25.00
Siskiyou County Board of Supervisors	25.00
McCloud Lumber Company	25.00
Long Bell Lumber Company	25.00
Shasta Water Company	25.00
McCloud River Club	25.00
Total Receipts	<u>\$565.75</u>

Expenditures:

Custodian's salary (J. M. Olberman)	\$390.00
Pack-train and mail-carrier, weekly	170.50
Printing	5.25
Total Expenditures	<u>\$565.75</u>

J. M. OLBERMAN, Custodian

M. HALL McALLISTER, for the Lodge Committee

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FREDERICK HITCHCOCK MORLEY FUND

For some time past the sum of \$300 has been generously made available annually for matters of special interest to the Sierra Club where other funds are

lacking, particularly in connection with the outings. From this fund a number of individuals have had their expenses either fully or partially paid on these outings. The magnificent collection of mountain photographs which the club has acquired and which is available for public exhibition was also purchased from this contribution. During the Canadian outing to Jasper National Park and Mount Robson, the services of two Swiss guides, Hans and Henry Fuhrer, were secured and paid for from this source. During the outing to Yellowstone National Park and the outing of last summer to Yosemite National Park and adjacent High Sierra, the expenses of Mr. Vernon Bailey, who so delightfully instructed and informed the members of the outing parties on the wild life of these regions, were paid from this fund. A portion of this fund has also been set aside to help defray the expenses of fitting up and furnishing the new club rooms in the Mills Tower. There is now on deposit in this fund in cash \$335.42 in the American Trust Company, in San Francisco.

WM. E. COLBY, Secretary

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TITLE-PAGE AND TABLE OF CONTENTS FOR VOLUMES XIII-XVI

There has been printed a limited number of copies of a title-page and table of contents for Volumes XIII to XVI, inclusive, 1928 to 1931, to be used in binding these four volumes as one. These will be sent free of charge to all who request them as long as the supply lasts.

NOTES AND CORRESPONDENCE

TRAIL NOTES

THE JOHN MUIR TRAIL Before the opening of the field season of 1931 it was decided that best results would be obtained by programming the work on the John Muir Trail so as to expend most of the \$10,000 appropriation during the first field season of the biennium. The efficient direction of National Forest officers was continued. In the Sierra National Forest the crews worked under the direction of Supervisor Roy Boothe, of the Inyo National Forest, because of the easy accessibility from the Inyo, or east, side of the Sierra.

Preliminary arrangements had already been made so that it was possible to begin work from two camps on July 1st. One camp was established at the junction of Fish Creek and Lone Indian Fork, above Cascade Valley. A section of trail completed from this camp connected the trail from a point at which construction had been terminated in 1930, south of Lake Virginia, to the point north of Silver Pass where the work of 1929 had been discontinued. A bridge was constructed across Fish Creek about one-quarter of a mile above its junction with Lone Indian Fork. This section of the trail was completed and the crew moved out on September 12th. A. A. Provience was in charge of the work.

Another crew, under the supervision of J. M. Farley, constructed a section of the trail ten miles in length from a point near Duck Lake to Reds Meadows. During this construction the camp was moved three times. Ranger Malcolm McLeod, of the Sierra National Forest, assisted in the location. The total distance constructed by both crews during the season was more than fourteen miles. Most of the grading of the last seven miles constructed by Farley's crew was done with a "V"-type grader drawn by horse. However, all the remainder of the work was of a much more difficult character. Forest Supervisor Boothe reports: "On the whole I am well satisfied with the season's progress since we finished all the work planned at the beginning of the season with an unexpended balance of about \$500 from an allotment of \$8000 for the work under our supervision. This, in spite of the fact that cost of supervision, packing, supply service, and cook's wages, was greater with two camps than it would have been with one camp as in former years. The greater efficiency of smaller crews no doubt offsets some of the disadvantages."

While this work was in progress within the Sierra Forest, approximately \$2000 was expended within the Sequoia National Forest, under Supervisor Cunningham's direction, where a trail was constructed up out of Center Basin to meet construction of the National Park Service, thereby rerouting the John Muir Trail over the Kings-Kern Divide just west of Junction Peak. Within the Sequoia National Park, five miles of fine park trail were built extending down to Tyndall Creek. Colonel White, Superintendent of Sequoia National

Park, reports: "No longer will suffering mules and hikers be compelled to stumble down Shepherd Pass and up over Junction Pass. The new trail on easy grade will shorten the distance by many miles and many thousands of feet of climb."

Only \$500 of the entire appropriation for the biennium remains to cover expenditures to be made during the field season of 1932. Supervisor Boothe has recommended, and the directors of the Sierra Club have endorsed his recommendation, that this small sum be expended for improvement of the trail through the cañon of the Middle Fork of Kings River near the Devil's Punch Bowl. It is unfortunate that large appropriations for the construction of the John Muir Trail have not been secured, and it is hoped that a more generous appropriation may be secured for the next biennium. W. L. H.

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HIGH SIERRA TRAIL Colonel John R. White reports fine progress made during the 1931 construction season on the High Sierra Trail which will eventually link Giant Forest in Sequoia National Park with Mount Whitney and the John Muir Trail. Construction is now in the most difficult section, that crossing the Great Western Divide over Kaweah Gap. Four miles of trail, largely through solid rock, were built during last summer.

The High Sierra Trail is practically complete from Crescent Meadow, at Giant Forest, to Lone Pine Creek, in River Valley below Hamilton Lake, in the heart of the finest mountain scenery in Sequoia National Park. At Lone Pine Creek a connection has been made to the Elizabeth Pass Trail, and, pending a mile or so of solid rock construction between Lone Pine Creek and Hamilton Lake, a good secondary trail has been built from Bearpaw Meadow via Wet Meadow to River Valley and Hamilton Lake. This trail although of a secondary nature compared with the High Sierra Trail is much better than the old trail between these points.

Hamilton Lake may now be reached on horseback, thus opening for the first time to regular tourist travel a granite amphitheater for which no fit name exists. "The Valhalla" has been proposed; but it seems fitting and so Colonel White suggests that the Sierra Club on the 1932 outing give a suitable name to the area now variously and somewhat inaccurately known as River Valley, Deer Creek, or Hamilton Lake. It is a true "yosemite," with waterfalls, domes, and lakes—and it will always be a trail yosemite.

From the Big Arroyo side the trail is finished over Kaweah Gap two miles towards Hamilton Lake. Only a mile or two of work remains between the two sections—but, "Whatamile"! It is solid rock bench above Hamilton Lake and there is the greatest construction problem on the whole High Sierra Trail, a box cañon or chimney about 100 feet wide and 150 feet deep which must either be spanned by a suspension bridge or half-tunneled for several hundred feet. Engineer Jack Diehl and his crew will tackle that as they have the other problems, and the thousands of tourists who will use the trail will little realize the difficulties that have been overcome. But the members of the Sierra Club, and particularly the directors, will know—for they helped to get the appropriations.

From the Big Arroyo a new and easy grade for two miles has been built towards Chagoopa Plateau and Moraine Lake, regions of happy memories; and and it is hoped to finish this so that in 1932 the club may see the former awful descent from Chagoopa to the Arroyo only through the rosy spectacles of memory.

EXPERIENCES IN AN ELECTRICAL STORM ON MOUNT WHITNEY IN 1904

BY BARTON WARREN EVERMANN

In July and August, 1904, I was sent by the Commissioner of Fisheries to make certain natural history investigations in the upper Kern River basin.* The party consisted of the following: Dr. Barton Warren Evermann, Chief of the Division of Scientific Inquiry, U. S. Bureau of Fisheries, in charge; Dr. Oliver P. Jenkins, Professor of Physiology, Stanford University; Professor Rufus L. Green, Professor of Mathematics, Stanford University; Professor Chancey Juday, University of Colorado; Captain Charles B. Hudson, then of Detroit, Michigan, now of Pacific Grove, California, artist; Hubert O. Jenkins and Olaf P. Jenkins, sons of Dr. Jenkins; Byrd Surby of Three Rivers, California, second packer; and two other packers and a cook. We outfitted at Redstone Park, near Three Rivers, with saddle horses, pack animals, and camping equipment, and on July 13 started for the Kern. We went by way of the South Fork of the Kaweah, Quinn's Horse Camp, and Coyote Creek. We crossed the Kern at Volcano Creek, and after visiting the basin of Volcano Creek, went on to Crabtree Meadow.

From Crabtree Meadow we made the ascent of Mount Whitney, reaching the summit about 11 o'clock on the morning of July 26. When we reached the summit the sky was fairly clear. We were able to see Lone Pine and certain of the more prominent peaks. We found the copper cylinder which had been placed in the cairn on the summit, took out the scroll, and recorded our names, the date of our arrival, the condition of the atmosphere, the direction of the wind, the temperature, and some other data. In the meantime the sky became overcast, and it began to sleet and lightning began to flash. We then walked down the slope a short distance from the summit and stopped at a shelving rock to eat our luncheon. Some of the party were under the edge of the shelving rock, others of us were standing by. I remember that I was opening a can of salmon with my knife when there was an evident electric discharge between them. I folded my knife, putting it in my pocket, and used my fingers to remove the salmon.

With luncheon in our hands, Dr. Jenkins, Byrd Surby, and I walked a little further down the slope, continuing to eat our luncheons. While we were doing so, and standing at what I should say were the three corners of an equilateral triangle, each side of which was about forty feet, I was knocked down, falling upon my hands and face, but not hurt. At the same time, looking toward

* For a report of these investigations, see: "The Golden Trout of the Southern High Sierras," by Barton Warren Evermann, in *Bulletin of the Bureau of Fisheries*, vol. XXV, 1905, pages 1-51, Department of Commerce and Labor, Washington, D. C.

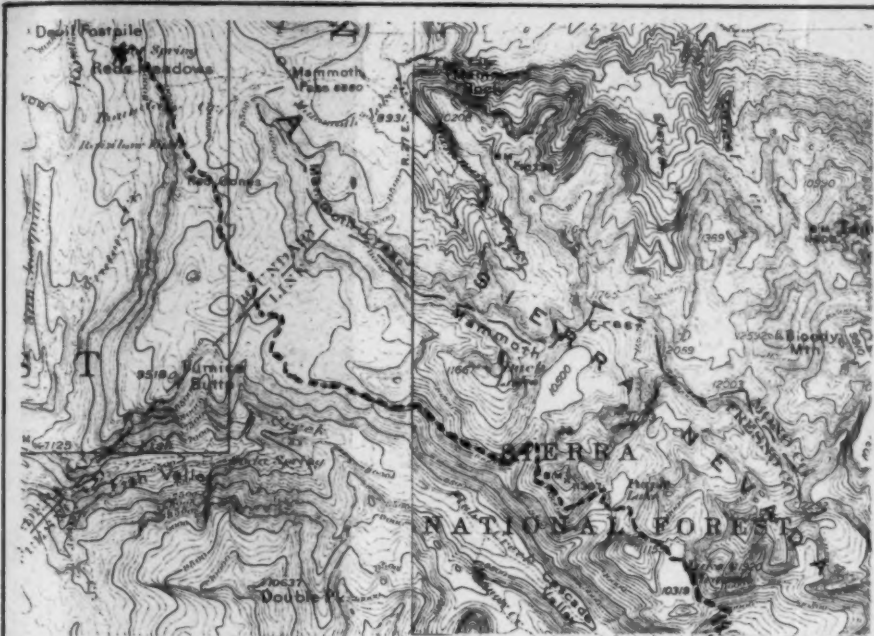
Surby, I saw that he also had been knocked down, falling backward. As soon as I got up I observed that Surby had not done so, so I went toward him, at the same time looking for Dr. Jenkins. I then saw that he also had been knocked down and was just rising to his feet. I called to him to come and help me with Mr. Surby. He came down and we sat on either side of Surby for some minutes, moving his arms up and down and pressing alternately upon his chest and abdomen, hoping to restore respiratory action. It soon occurred to us that as our heads were the highest objects in the neighborhood, and as the lightning was still continuing in a most terrifying manner, we might be in some danger, so we crawled away a short distance and lay down on the snow until the storm abated, which was in perhaps twenty minutes. We then returned to the shelving rock where the other members of the party were and held a consultation as to what could be done. Mr. Surby had evidently been killed outright.

We agreed that Professor Green and Professor Juday should go down the east side of the mountain to Lone Pine to get packers and pack animals to come up for the body. A horse trail had just been completed to the summit from that side of the mountain that summer. The rest of us returned to our camp at Crabtree Meadow. Dr. Jenkins and I returned to the summit the next forenoon and remained there all day waiting for Green and Juday, but they did not come, so we went back to our Crabtree Meadow camp and spent the night, returning to the summit the second morning. About 11 o'clock Green and Juday arrived with two pack animals and two packers. The body was wrapped in a heavy quilt and laid in a sawbuck saddle on one of the pack animals, fastened securely, and taken down to Lone Pine. Green and Juday accompanied it, Jenkins and I returned to our camp. The next day we broke camp and returned to Three Rivers by way of Broder's Cabin, Farewell Gap, and Mineral King.

A post mortem was held at Lone Pine. No external injuries or effects of the lightning could be discovered, except that the hair on one temple appeared to be scorched. An internal injury, however, was discovered; the right kidney had been burst. No other injuries were discoverable. Byrd Surby was about six feet tall, taller than any other member of the party. His feet were evidently wet, which we assumed increased the danger.

During our stay on the mountain there was almost constant flashing of lightning and roar of thunder. We estimated that the lightning struck at least fifty times within a distance of a mile of where we were. At one time small fragments of rock fell on the knees of one of the party at the shelving rock, and other small pieces fell about on the ground. The temperature of the air at the time we recorded it was 29° F.

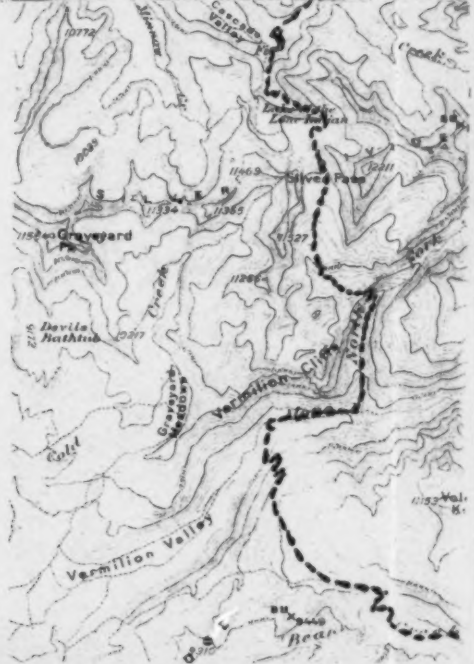
After returning home I learned that a similar electrical storm occurred the same afternoon upon Grayback Mountain, near San Bernardino. A party of botanists was on the mountain at the time and one member of the party was killed. A Weather Bureau report recorded an electrical storm at Lake Tahoe the same afternoon. The Weather Bureau observer stationed at Lake Tahoe had just returned from down the valley with a supply of provisions on his

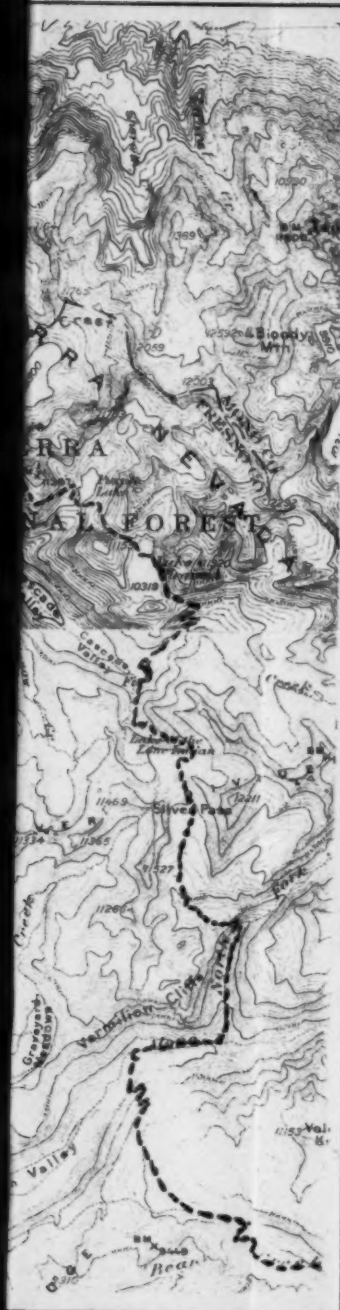


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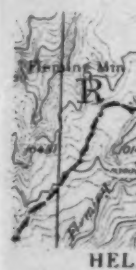
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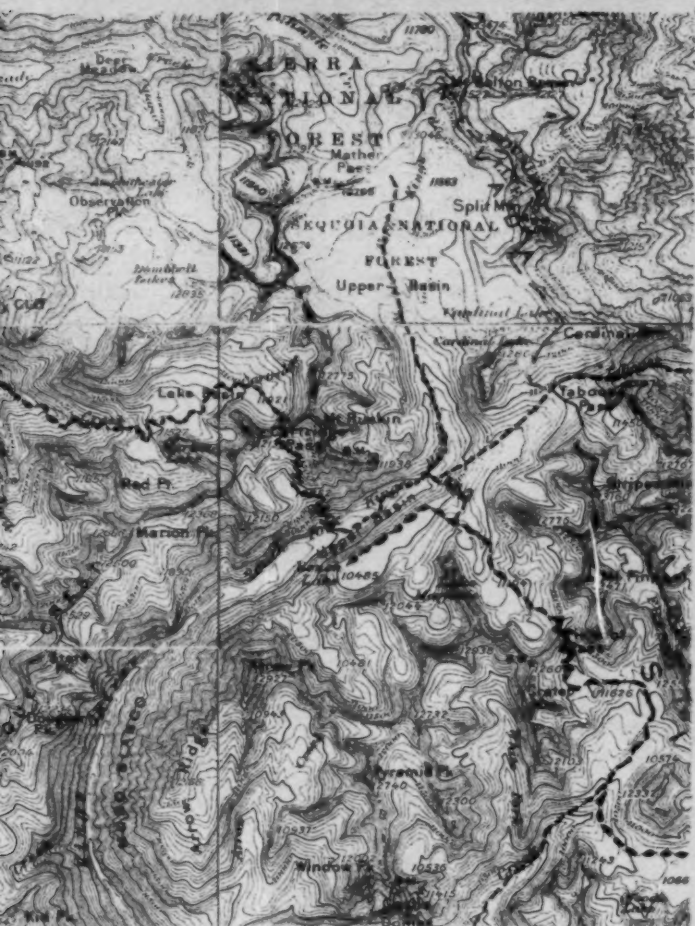
W. S. Solari
Chairman Map Committee
Sierra Club





CARTRIDGE, PI
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ARTRIDGE, PINCHOT AND TABOOSE PASS TRAILS

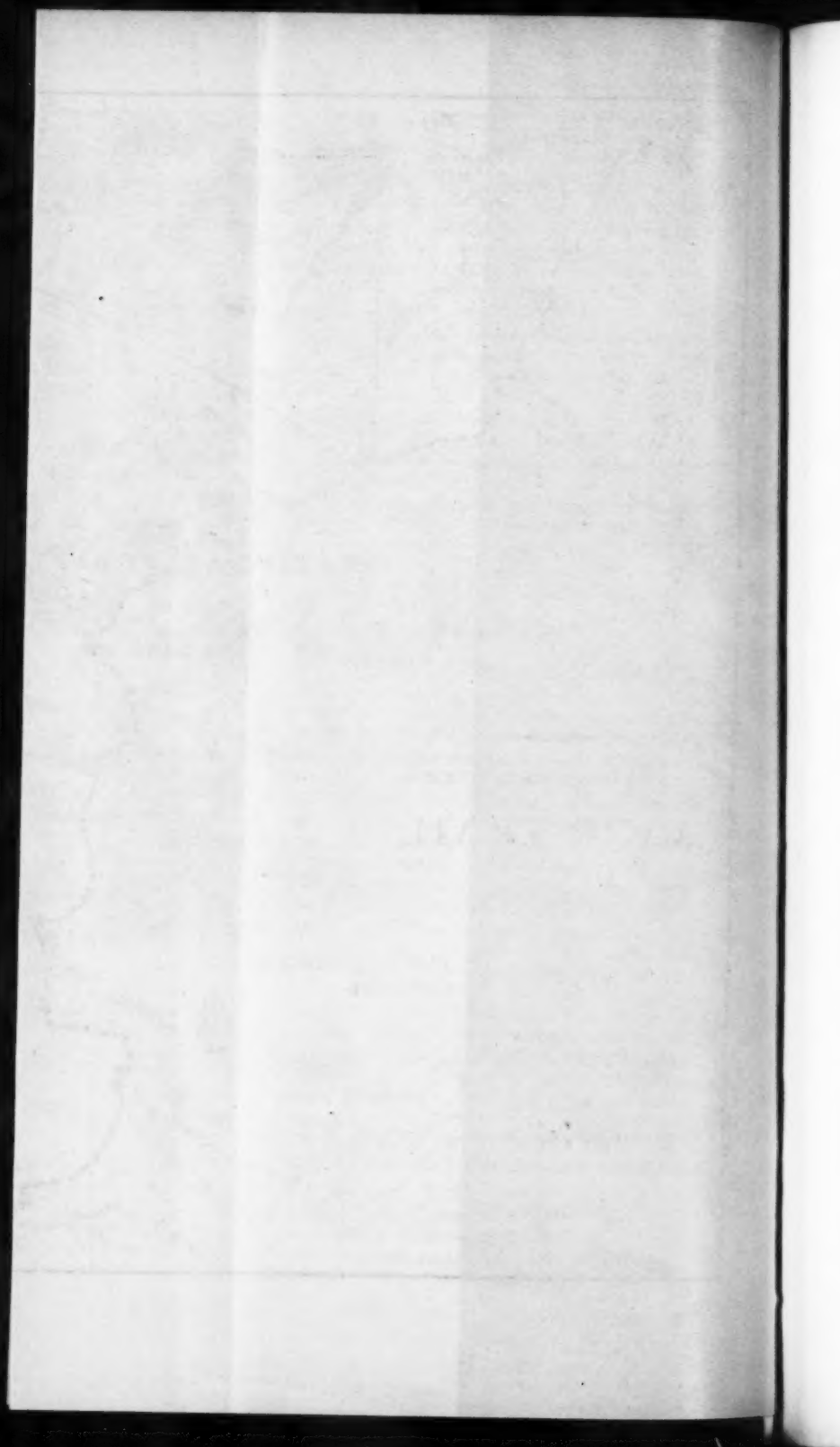
Mather Pass not passable for animals



HELL FOR SURE PASS TRAIL

Mt. Goddard Quadrangle





pack mule. Upon arriving at his cabin he tied the pack animal to a small tree and took the supplies into the cabin. He picked up an apple and began eating it as he walked to the door of the cabin to observe the storm which had come up. He had bitten out one large crescent-shaped piece from the apple. Holding the apple in his hand he observed a flame from each horn of the crescent. Dropping his arm by his side the flame disappeared, lifting his hand again it reappeared. The mule was somewhat frightened. When it held its ears erect there was a flame from the tip of each ear, when he dropped the ears down the flames disappeared. I suppose these were St. Elmo lights.

Our experience was very interesting as well as very distressing. Dr. Jenkins and I had on several previous occasions been on high mountains when there was some electrical disturbance, but we had not known the lightning to strike near us. In the Mount Whitney experience I did not see any lightning or hear any thunder and did not realize I had been unconscious at all until other members of the party spoke of how bright the lightning was and that the thunder was at the same moment as the flash. Dr. Jenkins said he realized that something was wrong and that he had just one thought, which was—"I am not here; I am some place else, but it's all right"—a very satisfying feeling.

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LETTERS FROM OTHER CLUBS

APPALACHIAN MOUNTAIN CLUB

During the year 1931 the Appalachian Mountain Club has as usual had a full program of trips and excursions. Each week-end saw several outings to interest the trampers, the rock-climbers, and the nature lovers. More extended trips were taken to the Great Smokies, to the national parks of the Southwest; and there was a camping trip in the mountains of southwestern Colorado, on which we joined the Colorado Mountain Club at their camp in the San Miguel Mountains for a strenuous week. Nearer at home the camps had an unusually busy season; the August Camp, this summer in Grafton Notch, gave a month of tramping and canoeing to about sixty tent-dwellers. Those rock-climbers who were not able to go to distant ranges found interesting new courses during a week at Mount Desert, Maine, and on shorter trips in the White Mountains. A hundred and twenty-five enthusiasts braved the frosts of the Columbus Day week-end, camping under the stars in the wild valley of the East Branch.

Owing to the inauguration of the "Snow Train" by the Boston & Maine R. R., at the instigation of the Appalachian Mountain Club, it was easy for all who desired to get to good ski-terrain each Sunday during the winter. A few week-ends and one week's trip provided further opportunity for skiers. A successful experiment (repeated this fall) was the course in dry skiing, consisting of black-board talks explaining the technique of skiing and of special setting-up exercises to get the muscles in shape. A beginning has been made at giving ski tests.

The club has continued its work of keeping 318 miles of trail and its seventeen shelters and six huts open to accommodate the climbing public. Work has

progressed on two new huts which when finished will make it possible to tramp from end to end of the White Mountains without carrying food or blankets. To serve their local publics, two more of the chapters have acquired camps, so now each of the six chapters has its camp.

MARJORIE HURD, Corresponding Secretary

THE MAZAMAS

Outstanding accomplishment of the Mazamas during the past year was the erection of a new high mountain lodge on the southern slopes of Mount Hood. Built at an altitude of approximately 4000 feet, the new lodge is within a few minutes' walking distance from a highway which is kept open the year around. Thus Mazamas have a headquarters for winter sports as well as for summer climbing around Mount Hood. Featured in the new lodge is a magnificent fireplace in which are twenty rocks received from outing clubs of the Pacific Coast. The rock sent by the Sierra Club came from Half Dome. As a result of action taken by visitors at the lodge dedication, Mazamas are taking steps to see if it is not possible to form a western organization of outing clubs. The Colorado Mountain Club would be included.

The Research Committee has made a name for itself in international circles. Its activity in measuring the flow of Eliot Glacier on Mount Hood over a period of years was cited by Mr. F. E. Matthes, of the U. S. Geological Survey, as one of the reasons for establishment of a committee on Hydrology of Glaciers, in the American Union of the International Union of Geodesy and Geophysics. Parenthetically it is interesting to note that the average annual rate of recession of Eliot Glacier, as observed during the past six years, is between fourteen and fifteen feet. This is less than one-quarter the average annual retreat of Nisqually Glacier on Mount Rainier as observed during the past ten years by the National Park Service. Such a difference is a challenge to investigators, since the two mountains are so close together and are in the same climatic zone.

The Annual Outing for 1931 was held in the Wallowa Mountains in eastern Oregon. The 1932 outing will be held in Garibaldi Park, British Columbia.

A splendid library has been built up and is being constantly added to. Bound volumes of mountaineering publications from all over the world are included, some of them extremely valuable. It is planned that this library shall be a source of information on all mountaineering lore, not only for Mazamas, but also for the general citizenry of Portland and vicinity—a virtual mountaineering reference encyclopedia. Despite conditions during the period, the end of the Mazama fiscal year for 1931 recorded a gain of twenty-one members during the year, bringing the total to 648.

MERLE MANLY

THE MOUNTAINEERS

The Mountaineers report a year of constant activity with no one outstanding achievement. Their ready access to the Cascade Mountains stimulates climbing in the summer months, and in the winter months, snow sports, especially skiing. A goodly number of ski experts have already been developed. Meany Ski Hut, on the line of the Northern Pacific Railroad, is the center for this sport, but Snoqualmie Lodge, near Snoqualmie Pass on the Sunset Highway, now kept

open through the winter, is also a favorite ski center. From Snoqualmie Lodge, too, more than a score of good stiff climbs of 6000- and 7000-foot peaks tempt the energy of climbing enthusiasts.

The Mountaineers' summer outing for 1931, pronounced by its members "the best yet," was held in Garibaldi Park, British Columbia. Ascents of many peaks in that region were made, Mount Garibaldi and Castle Towers being considered the leading climbs. On the summer outing of 1932 the club will visit and climb the Guardians of the Columbia: Mounts Adams, St. Helens, and Hood.

The Mountaineer for 1931 publishes data regarding many Washington climbs.

WINONA BAILEY

THE COLORADO MOUNTAIN CLUB

Many members of the Colorado Mountain Club are enthusiastic skiers, and the club has, during recent years, stimulated much of the interest in Alpine skiing which is now to be observed outside of the club. Unfortunately, the unusual openness of last winter, deeply disappointing to skiers who had expected to find six feet of snow in localities still bare by the end of January, prevented the realization of plans for a season of greatly increased skiing activity, and eventually compelled the postponement of the winter outing. At first scheduled for Stapp Lake in February, it could not be held until March, and then only under conditions such as have never before been recorded in the high Colorado mountains. It was not until spring that successive heavy snows provided the only fine skiing of the year. Every advantage was taken of these belated opportunities, and ski trips were continued in the Berthoud Pass region until the middle of April.

The summer outing was held in the San Miguel Mountains in southwestern Colorado, a region rich in scenic grandeur and historic interest. The party camped near Mount Wilson, and many climbed not only that mighty peak, but Wilson Peak and newly named El Diente (all over 14,000 feet) as well. Four climbers made the difficult ascent of Lizard Head Peak. Nearly thirty members of the Appalachian Club camped with us for the greater part of the two-week period, a happy circumstance which added greatly to the pleasure of the outing.

The death, in February, of Mr. Hermann Buhl, who had worked with consistent devotion for the club for many years, was a serious blow. His skill as a skier, earned by early years of Alpine training, was of much value to us, especially during the early years of the growth of the sport.

In addition to the regular monthly issues of *Trail and Timberline*, we published a revised and much improved edition of Mr. John L. J. Hart's "Fourteen Thousand Feet," a work which has proved very valuable to students of Colorado's mountains since its first appearance in April, 1925. The new edition, published in August, includes much new material, with many illustrations, and a "Climber's Guide to the High Colorado Peaks," compiled by Elinor Eppich Kingery.

That the drought of the winter persisted throughout the summer seems worth recording, for many beautiful regions suffered appallingly from lack of

water. It has been estimated that the Arapahoe Glacier, the largest in the State, was reduced to a size which it had not been expected to reach for two hundred years. It is reassuring to report that the new winter has already brought generous snowfalls to the high divides.

DAVID ROSENDALE

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MOTORIST-HIKERS

The prediction has often been made that the automobile will eventually supersede "shanks mare." This is true, of course, in some fields of endeavor, but not in hiking. Rather, the motor-car has become a convenient adjunct to hiking. Each year it helps us to go farther and farther afield to visit the far-flung beauty-spots of our state, and it brings us into intimate contact with nature at more frequent intervals. We now attempt trips on week-ends and two-day holidays that formerly required an entire vacation period or a specially organized expedition. We of the San Francisco Bay region have had our territory enlarged to include Lassen Peak on the north, the Pinnacles National Monument on the south, and a vast area of the Coast Range, and even portions of the Sierra Nevada, together with several minor ranges and isolated peaks.

As an example of what *can* be achieved with the aid of a machine, I may mention a whirlwind ascent of Lyell made last summer by two members of the Sierra Club. Leaving Oakland late Friday evening, the men camped that night on the Big Oak Flat Road near Carl Inn. They continued next morning to Tuolumne Meadows, where they parked the car and then walked nine miles and made camp on the Lyell Fork. Arising early next morning (Sunday), they made the ascent of Lyell, returned to the car, and drove back to Oakland, arriving late that night.

Another instance of eager hikers combining motoring and hiking, was an ascent of Whitney by three other members of the Sierra Club over the September holidays. Leaving San Francisco Saturday afternoon, they camped that night near Bakersfield, continuing next morning to Lone Pine, where they parked the car and then hiked over the new trail to the camp at Ibex Park. The next day (Monday) they made the ascent of Mount Whitney and returned to the base camp for the night. Leaving camp on Tuesday morning the trio—which, by the way, included one woman—made the descent to the parked automobile and drove to Paso Robles. The next morning they returned to San Francisco, having made the entire excursion in just four days.

As times goes on, and as the populated centers increase, an automobile will undoubtedly become indispensable in reaching open country. And, inasmuch as a hiker's first love is hiking, he will travel great distances to do his hiking. Moreover, we can safely prophesy that in time he will become air-minded and will reach his haunts by airplane.

J. P. FERRY

MEMORIALS

ELLIOTT MCALLISTER, 1862-1931

Elliott McAllister, who died in San Mateo, August 3, 1931, was one of the charter members of the Sierra Club and for a long time was prominent in its activities. From 1893 to 1898 he was Recording Secretary, and from 1899 to 1904 he was Vice-President. From 1904 to 1910 he was Editor of the *SIERRA CLUB BULLETIN* and brought out eleven numbers (from volume V, number 3, to volume VII, number 4). He also contributed an article to one of the earlier numbers, "Itinerary of a Route from Gentry's to Top of El Capitan and Yosemite Falls." (*SIERRA CLUB BULLETIN*, May, 1904, i:4, pp. 133-135.)

Elliott McAllister was born in San Francisco, December 9, 1862, the son of Cutler and Julia Parkman McAllister. He was graduated at St. Augustine College, Benicia, in 1880, and from the University of California in 1885. He studied in Berlin and Leipzig for a year, then entered Columbia University Law School, New York, from which he was graduated in 1888. He returned to California, was admitted to the bar, and commenced the practice of law in 1890. For a time he represented Marin and Contra Costa counties in the State Senate. In 1895 he married Alice Decker, who, with three of their five children, survives him. Elliott McAllister, Jr., is connected with the Bank of California; Decker Gordon McAllister is in business in San Francisco; Breck Parkman McAllister is practicing law in New York. Elliott McAllister was a brother of M. Hall McAllister, who has also long been active in the work of the Sierra Club.

JESSE B. AGNEW, 1863-1931

Jesse B. Agnew, of Visalia, was well known to a great many of his fellow members of the Sierra Club. He accompanied the club on a number of the summer outings, he attended several of the annual dinners, he contributed to the *SIERRA CLUB BULLETIN*, he took an active part in the club's public work, especially the Sequoia National Park enlargement program; but, above all, he was the genial host of Horse Corral Meadow. "The Hotel de Horse Corral" was an institution of the Kings River region for many years. Any Sierra Club member, anyone who showed that he truly loved the mountains, was welcome there. After the long climb out of Kings River Cañon, what a marvelous refreshment was the bath in Jesse's great hollow-log bathtub with steaming hot water running from pipes coiled over an open fire! There were feasts of Gargantuan proportions, sometimes prepared by Jim Clay, who turned out to be not a Chinaman but an Englishman. But, overspreading all the material satisfactions, was the spirit of hospitality and the high quality of the conversational entertainment provided by the host.

Jesse B. Agnew was born in a log cabin somewhere between Eddyville and

Oscalooza, Iowa, on September 15, 1863. The middle initial was not part of his christened name, but was adopted later. He always considered that it stood for his mother's family name, Barber. His father was Abram Agnew, a typical pioneer, who in 1846 crossed the plains to California, but went back to Iowa the following year. In 1849 he came to California again, but again went back after only a brief stay. A third time he came to California, bringing 150 head of cattle from Iowa to Sacramento, in 1852 or 1853, with the loss of only one steer. For a short time he ran a blacksmith shop at Hangtown (Placerville), the same shop that was afterwards run by Studebaker. In 1854 he again went back to Iowa and engaged in farming, interrupting this vocation from time to time by three trips to the Pikes Peak mines. Finally, in 1873, he sold his farm and moved with his family to California, traveling this time on the overland railroad. Jesse's mother was Sarah Jane Barber, descended from an old Connecticut family. There were two other children, Hugh and Elizabeth. The latter married George Smith.

The family settled in the Santa Clara Valley, where they lived for many years at the place now known as Agnews. Jesse went to school there for a while, then attended Wright's private school in Oakland. After leaving school he did some surveying in Yolo County, making some maps for Judge Bush. In 1883 Jesse went to Tulare County and worked for D. K. Zumwalt in the Southern Pacific land office until 1891. During this period he became interested in the mountains and began to acquire titles to land in the Kings River region.

In 1891 Jesse returned to the Santa Clara Valley and engaged in the seed business in San Jose with his father and brother. Abram Agnew died in 1900 and his wife in 1906. Hugh Agnew died in 1904, and after his death Jesse formed a partnership with Thomas Cox and Henry Voorman, known as the Pacific Seed Growers Company, an association which lasted until 1920. During this period they were very successful; Voorman took charge of the growing, Cox managed the office, while Agnew did the selling. Both the growing and the selling operations were very widespread and Jesse Agnew traveled extensively, not only in this country, but in Europe and other parts of the world. More and more he came to regard Visalia as his home and Horse Corral Meadow as his domain.

In 1889 he married Ida Young, of Visalia, who died in 1923. In her memory he gave to the Sierra Club a tract of eighty acres on the floor of Kings River Cañon. (SIERRA CLUB BULLETIN, 1924, XII:1, pp. 33, 93.) In 1925 he married Wilma E. Cassabeer, of San Diego. Their trip around the world is described in "Ducking Trails Around the World," in SIERRA CLUB BULLETIN, 1927, XII:4, pp. 401-405.

F. P. F.

MOUNTAINEERING NOTES



MOUNTAIN-CLIMBING ON THE 1931 OUTING

NOTES BY GLEN DAWSON

Last summer Sierra climbing took a stride forward. Through the efforts of Francis P. Farquhar and Robert L. M. Underhill the art of correct climbing with a rope was introduced to some of us. The rope is intended for safety and not as a physical aid. Because of the increased safety by the use of the rope, Sierrans can make more difficult climbs. More and more we are becoming interested in new routes and traverses rather than in the ascents of peaks by easy routes.

Cathedral Group.—There are a number of interesting short climbs south of the Soda Springs. On July 12th a party practiced climbing with ropes on Unicorn Peak. We went up the northeast face and came down the usual south ridge route, thus probably making the first traverse of Unicorn Peak. Only twenty-one names since 1921 were found in the register. The earlier records have evidently been lost. The members of our party were Francis Farquhar, Walter Brem, Marjory Bridge, Jules Eichorn, Alfred Weiler, Glen Dawson. Later in the day Julie Mortimer and Morgan Ward climbed Unicorn Peak.

From Unicorn Peak, Jules and I climbed the west side of the Cockscomb. We found that the knife-edge summit, about fifteen feet east of the flat summit, is the higher of the two. Unfortunately all records on the Cockscomb have been destroyed by water. We returned via the east face, a more difficult and more continuous set of pitches than on the west.

The same day Nathan Clark and Edward Allen climbed Cathedral Peak.

On July 24th two parties of eight each climbed Cathedral Peak. This is probably the largest number ever to climb the peak in one day. Jules Eichorn and I were successful in climbing the prominent pinnacle down to the west from the main peak. We dropped a bit to the right and found a way up on the side toward Cathedral Lake. There was no sign of previous ascent. We roped down the seventy-foot cliff facing the main peak.

On July 26th Walter Brem, Jules Eichorn, and I left the Soda Springs and went up Budd Creek, between Cockscomb and the Echo Peaks, to the long knife-edge known as Echo Ridge. We climbed the highest point from the east. It also looked possible from the west. The rock is weathered so as to be rotten and insecure. We found no record of former ascent. After the climb we went cross country to the Sierra Club camp near Babcock Lake. (Plate xxiii, SIERRA CLUB BULLETIN, 1930, XV:1, is a picture of Echo Ridge.)

Finger and Matterhorn Peaks.—While the main party was at Benson Lake, Jules Eichorn, Walter ("Bubs") Brem, and I took a four-day pack trip. We went via Benson Pass and Tallulah Lake to where Camp Creek joins Slide Cañon. After a night in Slide Cañon we camped two nights by a lake below Burro Pass. July 19th we climbed the flat-topped east peak of Finger Peaks,

but found it lower than the peak to the west which we climbed later. We were evidently the first party to climb these peaks. The climb to the lower peak direct from the lake has several difficult pitches.

July 20th we climbed Matterhorn Peak. We also climbed the second highest point (Matterhorn Peak is the highest) of the Sawtooth Ridge. There was no record of previous ascent on this peak to the north. We left hurriedly due to an electrical storm.

July 22d the following climbed Matterhorn Peak from Matterhorn Cañon: Ralph Arthur Chase, Frank E. Older, Julie Mortimer, Dorothy Baird, Alice Carter, Morgan Ward, and Nathan Clark.

The Minarets.—Jules Eichorn, Walter Brem and I went ahead of the main party to Garnet Lake. We crossed a tiring 12,400-foot pass between Mount Lyell and Rodgers Peak. July 31st we left the lake above Garnet Lake to explore the Minarets and, if possible, find the highest. We had a copy of C. W. Michael's account (SIERRA CLUB BULLETIN, 1924, XII:1). We followed his route through the notch and up the chimney. The chock-stone which was his greatest difficulty we surmounted by *courte-échelle* to the "ladder with the lower rungs missing." We reached the top of Michael's Minaret two hours after we started in the chimney. While on top I was under the impression Mr. Michael did not climb the same peak. (There were several reasons, one of which was it is impossible to see Iceberg Lakes and Lake Ediza from the portal.) But we later decided that the peak we climbed is undoubtedly the same peak Mr. Michael made a first ascent of on September 6, 1923.

Another hour's travel brought us to the Third Minaret—a first ascent. We followed the ridge still farther and climbed Clyde's Minaret, the peak above Iceberg Lakes to the left of the glacier. Homer D. Erwin (July 7, 1931,) is the only person to climb the peak since the two 1929 parties (SIERRA CLUB BULLETIN, 1930, XV:1, page 190). We returned by way of Iceberg Lakes, keeping on the rocks and not going onto the glacier. We were out fourteen hours.

By using a hand level from the three major peaks of the Minarets we found that Clyde's Minaret is the highest, Michael's Minaret the second highest, and Third Minaret, which connects the other two, is third highest of the group. There is, however, very little difference in the height of these peaks. The left picture of Plate xiv in SIERRA CLUB BULLETIN, 1924, XII:1, is of Clyde's Minaret, taken from the portal below Michael's Minaret.

August 3d Norman Clyde took Julie Mortimer, Alice Carter, and Dorothy Baird up Clyde's Minaret. They came down the glacier after dark, experiencing some difficulty.

East Side of Banner Peak.—On August 3d Robert L. M. Underhill and Jules Eichorn made the first ascent of the east side of Banner Peak. The east side is the face seen from Garnet Lake. They started by the chimney to the left of the buttress to the south of the Banner glacier. They stayed in the chimney a short while and then took to the ridge leading up from the buttress. They traveled along the ridge until they came to the first real difficulty. The ridge overhung and looked almost impossible. They therefore traversed diag-



PACK TRAIN IN THE DUST
Photograph by Charles S. Webster



SODA SPRINGS, TUOLUMNE MEADOWS
Photograph by Herbert P. Rankin

onally upward about eighty feet over a rather smooth wall. From that point on, they climbed up broad, steep chutes or faces until they reached the top.

The accident which occurred the following day cannot be blamed to rock climbing since it occurred in the talus before the climb began and might have happened on any of the regular Ritter or Banner climbs.

Other Ascents.—July 28th fifty-seven members of the Sierra Club climbed Mount Florence, in three parties, the leaders of which were Ernest Dawson, Lewis Clark, and Jules Eichorn, respectively.

August 2d fourteen climbed Mount Ritter from the Ritter-Banner saddle and found the ice tongue difficult for a large party. August 3d several parties climbed Mount Ritter by going up to the right of the southeast glacier. They found no special difficulty. Many of them returned by the chimney leading to the Ritter-Banner saddle. Nathan Clark led a party to Banner Peak the same day.

Peaks climbed by members of the Sierra Club on the 1931 Outing, other than those mentioned above, include: Fairview Dome, Volunteer Peak, Regulation Peak, West Peak, Piute Mountain, Mount Conness, Ragged Peak, Mount Dana, Vogelsang Peak, Parsons Peak, Simmons Peak, Mount Lyell, Mount Maclure, San Joaquin Mountain, and Parker Peak.

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A REVIVAL OF INTEREST IN MOUNT STARR KING

BY FRANCIS P. FARQUEAR

The summer of 1931 saw a number of ascents of the dome, Mount Starr King, which is such a prominent object in the landscape as viewed from Glacier Point, Half Dome, and other points in the vicinity of Yosemite Valley. Although dangerous if attempted carelessly, or if inadequately shod, the climb has proved to be much simpler than its appearance might lead one to suspect. Nevertheless, it should not be attempted by beginners in mountaineering, nor by anyone who has not had considerable experience with steep granite slopes. Moreover, it absolutely requires rubber-soled shoes of high adhesive quality.

It is remarkable that a period of fifty-four years should elapse between the ascents of this summer and the last previous ascent, that of the Anderson-Hutchings party of 1877. The first to reach the summit after this long gap were Warren A. R. Loose, of Fortuna, and Eldon Dryer, of Pomona, who made the climb on June 25th and repeated it, with Judd Boynton, of Berkeley, on July 4th. On both occasions the climb was made on the northeast side. On July 2d, Harry Hopkinson, of Hollywood, made the climb from the northeast. On July 23d, John Emlen, of Philadelphia, Pennsylvania, and W. T. Frost, of Berkeley, also made the ascent by the northeast slope. The climb was repeated, on July 24th, by E. C. Woodruff, of Manteca, and again, on August 9th, by O. L. Williams, Ralph James, and Albert E. Peterson, all of Berkeley. Woodruff, after climbing on the northeast side, came down and circled to the south, looking for Anderson's iron bolts. He was unsuccessful in finding the bolts, but did succeed in attaining the summit by the south slope. On September 10th, Park Naturalist C. A. Harwell and Ranger-Naturalist Carl Sharsmith made the climb from the northeast.

Although the records of the early ascents of Starr King are somewhat obscure, and in some points contradictory, there is little doubt that George B. Bayley and E. S. Schuyler were the first to stand on the summit. This first ascent probably occurred in August, 1876. Hutchings (quoted below) implies that it occurred a few days before his own ascents, which seem to have been made in 1877. The following passage, however, from a letter from John Muir, published in the *San Francisco Evening Bulletin*, September 6, 1876, establishes the earlier date. Muir writes under date of August 28, 1876:

A firm, condensed, muscular little man of my acquaintance comes aclimbing in the mountains every year. His love of alpine exercise seems to suffer no abatement, notwithstanding he scrambles most of the year among the dangerous heights and hollows of the San Francisco stock market and among the arithmetical banks and braes of banking. He is a short man, or even shorter, who, disdaining the plush lawns and gravelly margins of Yosemite, pushes bravely out among the precipices of the loftiest Alps; scaling cliffs for the dear love of the danger, glissading adown glacier declivities and floundering through snow fountains with indomitable perseverance, yet without any of the distinctive characteristics of the cautious mountaineer. Mounts Shasta, Whitney, Lyell, Dana and the Obelisk, all have felt his foot; and years ago he made desperate efforts to ascend the South Dome, eager for the first honors, and certainly no one could be better qualified to succeed in a chance way; for with the grip and audacity of a squirrel, his tense, muscular limb bundles ply with a pattering, twinkling motion, seemingly independent of ordinary holds. The only kinds of mountain climbing in which he appears at disadvantage are flood and earthquake taluses. The various blocks and bowlders of which they are composed are all placed by natural laws in exquisite rhythmical order, and the tuned mountaineer, bounding adown their curves, finds himself playing upon a grand instrument. But here Mr. Short finds difficulty and discord in pattering from key to key, like a lady with stumpy, abbreviated fingers, playing a piano. Upon plain flowing folds of granite, however, the case is different, and happily our hero has at length found what he long has sought—an accessible mountain, with name and fame deemed inaccessible, and that mountain is Starr King, the loftiest and most symmetrical of the Yosemite Domes. Returning the other day from an extended excursion into the high Sierra, he determined an attempt upon it from the north, and now the silk handkerchief of a brave young lawyer who accompanied him, floats above it on the breeze, proclaiming the small fact, that with the exception of a few branches of spirey needles, the last of Yosemite inaccessibles has been conquered. To Anderson belongs the honor of first standing in the blue ether above Tissiack; and to the dauntless San Francisco Short belongs the first footprint on the crown of Starr King.—JOHN MUIR.

J. M. Hutchings mentions the first ascent of Starr King in his: *In the Heart of the Sierras*, 1886, p. 473. Muir's "Short" is easily identified with Bayley.

Less than a dozen persons have been able to ascend it. The first to do so was Mr. George B. Bayley and Mr. E. S. Schuyler; followed by George Anderson and the writer, J. M. Hutchings, a few days afterwards, who having attached ropes over difficult places, enabled Mrs. A. L. Hutchings and our daughter Florence to ascend it, who were the first and only ladies, at this writing, that have accomplished the difficult task.

There is another account by Hutchings, however, in which, if the name has been correctly transcribed, "Mrs. A. L. Sweetland" made the ascent, and no mention is made of Mrs. Hutchings or their daughter Florence. Yet, in the record found on the summit, as reported by E. C. Woodruff, the name of Mrs. Hutchings appears, together with Hutchings, Anderson, "and three others." The account referred to is a transcript of Hutchings' journal, on file in the Yosemite Museum. The portion describing the ascent of Starr King is here reproduced in full:

August 23 and 24, 1877.—Our camping ground encircled by forest trees and about a mile from the goal of our ambitions was left about 10 A.M., under the guidance of Geo. G. Anderson, the first to climb the South [Half] Dome. We threaded our way among silver firs, tamaracks, and *pinus monticola* to the edge of the débris lying just under this lofty landmark, then picking our way among blocks of granite and stunted live-oak shrubbery, we sought the saddle at the south-eastern side of the peak. Well supplied with ropes.

"Oh, that isn't much of a climb," exclaimed our leader, as we looked together up the smooth granite slope before us, standing at an angle of about 43°, with here and there a block, or shingle, formed by the concentric and conchoidal cleavage of the rock—to climb over.

Taking off his boots and putting on some home-made moccasins, the soles of which he had previously covered with turpentine, thick in consistency, then winding the coil of rope over his shoulder and under his arm, he picked up a hammer (which he fastened in his belt) and some iron eye-bolts; said "Well, here goes!"

Walking up the smooth granite as if it were a gravel hill, he arrived at the first shingle. "Now," he said, "I'll put an eye-bolt here." So an eye-bolt was driven in and the rope fastened to it, allowing the lower end to reach the starting point. Here a huge block of shingle was encountered. Fastening about twelve feet to his belt, so that if he slipped he could not fall more than that distance, he proceeded, taking hold of the edge of the shingle, and advancing inch by inch. But he had made the rope too short to allow him to reach the next point of safety. He said composedly, "Now Mr. H., can you come up as far as this?"

I tried, but the rope was small and my fingers long and I couldn't get a good grip. "If you cannot get up I shall have to fall." "Then I'll come." Catching the small rope over-handed, I knelt upon the rock and crept along aided by the rope, until I reached the eye-bolt and could just reach to his foot. This I held until he got a grip that enabled him to move his other foot. In a couple of minutes he was in a place of safety. Obstacle after obstacle was overcome, and finally we were standing firmly on the summit of "Mount Starr King," 9230 feet above sea-level.

It is impossible to describe the glorious panorama! Mountain ridges and hollows, pine covered, like waves of the sea—with here and there white knolls, relieving the dark hollows! While away to the eastward lay the grand chain of the Sierras—lofty peaks in sunlight and deep cañons in shadow, passing clouds casting shadows on the peaks."

Deep in the gorge below slept Yosemite. The panorama—to the north and east—the top of El Capitan, Eagle Point, Yosemite Fall, North Dome, South Dome, Mounts Hoffmann and Tuolumne, Clouds Rest. Between Clouds Rest and Mount Hoffmann stood grandly up in the far distance a group of sharp peaks that must be among the highest of the Sierras in that direction. From Clouds Rest, Mount

Wonderful, Mount Dana (far away on the crest of the range), Monastery Peak, Cathedral Peak, Temple and Echo Peaks. Thence numerous unnamed mountains filled the space until the Lyell group. Near and high in appearance rose the bold sharp outline of Gothic Peak (since, "Mount Clark"), thence Gray Peaks and Red Mountain. By the waters of the San Joaquin could be seen Black Mountain. To the south and west lay a long line of dull, whitish ridges that were only interesting as a contrast with the peaks and cañons of the Sierras. The whole middle ground, although embracing beautiful groups of trees, glimpses of river views, wide plateaus of pines, meadows, and bare bluffs, is comparatively tame.

Forest fires are on every hand making the landscape hazy and dull. I execrate the vandalism of the sheep-herders!

Aug. 23d G. G. Anderson, J. G. Lambert [J. B. Lambert?], and J. M. Hutchings made the ascent.

Aug. 24th G. G. Anderson, Mrs. A. L. Sweetland, S. A. Walker, and J. M. H.

The entire area of the summit is only about 100 ft. by 75 ft. Two monuments erected gave evidence of someone having ascended this peak before us. We erected a flag pole, put up a flag, painted by J. G. Lambert—for our party.

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A CLIMB OF MOUNT CLARK FROM THE NORTHWEST

BY PARK NATURALIST C. A. HARWELL

Following a climb of Mount Starr King on September 10, 1931, Ranger-Naturalist Carl Sharsmith and I made camp at a small stream, east of Starr King, that flows into Illilouette Creek. September 11th, we were away by 8 o'clock. We contoured so as to reach the cirque of Clark directly at its north. A white-tailed rabbit, still in its summer garb, crossed our trail close at hand, and a coyote running conies, at close range, made the trip more interesting. Our route brought us out on the western edge of the great northern cirque of Mount Clark. It contained no snow whatever. We scrambled down, ate a bit of lunch, and at 11:30 climbed out of the cirque directly eastward by easy ledges and then followed it around toward the mountain top, which of course was plainly visible and looked easy from our direction. Before we knew it we were within fifty feet of the top, where a small chimney offered an easy scramble that brought us out at our objective at 12:30.

At 2 o'clock we started down, roped together with a 60-foot rope, via the arête directly toward the north. The views from the sides were spectacular. The arête, though very narrow and broken, seemed safe enough. Two times we dolomited distances of sixteen to twenty feet. At a point which seemed to be directly at the center of the great U-shaped north cirque of Clark, we decided to save ourselves at least a mile of hard going by attempting a straight descent of approximately 400 feet. The rope here was indispensable. First we let down our packs to a ledge fifty feet below and then dolomited to that level. Convenient and secure rock-knobs were available for this kind of rock-work, and the natural ledge brought us nearly to the bottom. Two shorter dolomites brought us directly to the bottom of the cirque at 4 P.M. At 4:15 we left the cirque, bearing to the northeast until we were upon the ridge looking toward Merced Lake. This ridge we followed to an outcrop of sedimentary

rock determined by Dr. Pabst, of the University of California, as being a remnant of the old sedimentary cover that was once over all the granite of the Yosemite region. This sedimentary ridge is very plainly visible from Glacier Point and Sentinel Dome.

On September 12th we left our camp at 9 o'clock, going directly down the Clark Fork of the Merced River to the new Merced Lake Trail, which we reached at 11:15. This new trail, through Lost Valley, up the Merced River, to Merced Lake, will greatly popularize the climb of Mount Clark. This route up the mountain seems quite a desirable one because horses can be ridden to within three miles of the summit.

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LEVELLING ON THE MINARETS

BY HOMER D. ERWIN

I did lots of climbing during the summer, but the most outstanding climb was that of a solo ascent of the highest of the Minarets, on July 7th. I levelled with a transit onto adjoining peaks of the Minarets and found that the summit which I occupied, namely, the most southern, was the highest.* The next to the highest point lies directly west and slightly north of the most southern.† Upon this I observed a small depression angle, and on the rest increasingly greater depression angles were observed. It is certain, therefore, that the most southern Minaret is the *highest*. From my own experience, it can only be ascended by way of the glacier on the east slope. In 1929 I attempted an ascent from the head of Iron Creek, but was stopped by a vertical cliff.

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SOME ASCENTS BY NORMAN CLYDE IN THE SIERRA IN 1931

January to April—Whitney, in the latter part of January. Several ascents of Peak 12,840 and others above Glacier Lodge. April 22d—Mount Winchell.

June 15th—East Peak of Basin Mountain and traverse to West Peak; good climb. 19th—Humphreys; by crossing glacier northeast of mountain, via snow-tongue and rocks to northwest shoulder, thence by a short traverse to the usual route up the west face; a good climb. 24th—Peak 13,116, south of Humphreys. 27th—Peak 13,100, east of Haeckel; no cairn; a difficult ascent by the route followed. 29th—Powell; an interesting climb from the northwest. 30th—Thompson, by the west face; an excellent rock-climb.

July 5th—Jordan, and first pinnacle south of it; no cairn on latter. 7th—Williamson, by the west face. 15th—Russell, up eastern arête and down south face; a very good climb. 16th—Peaks 13,571 and 13,387 (on main crest north of Russell); no cairn on latter; a good rubber-soled shoe climb. 17th—Whitney, by north face, and descent by large chute northeast. 20th—Whitney. 22d—Mallory, Irvine. 27th—LeConte, Mallory, Irvine. 31st—Highest pinnacle in a group southeast of Cathedral (Yosemite National Park); no cairn; accompanied by Carl Sharsmith.

* Referred to elsewhere as "Clyde's Minaret."

† Referred to as "Michael's Minaret."

August 1st—Conness, from the north; with Sharsmith and a large party. 3d—Highest of The Minarets; accompanied by Misses Julie Mortimer, Alice Carter, Dorothy Baird—the first women to make the ascent. 9th—North Palisade from the glacier, and traverse to second highest peak. 11th—Temple Crag, by north face. 13th—Northwest peak of North Palisade, from the glacier. (Last three climbs with members of Farquhar-Underhill party.) 16th—Whitney, by the east face; first ascent by this route; with Underhill, Eichorn, Dawson. 27th—Middle Palisade, by north face.

September 3d—Hurd. 6th—First peak on arête to the north of Thompson. 7th—Thompson, from the northwest; a difficult rock-climb in lower portion. 10th—Highest of Inconsolable Peaks. 17th—Agassiz Needle. 24th—Crystal Crag; a good rock-scramble from the west. 26th—Tom. 29th—Peak 12,560, at head of Pine Creek; no cairn; a good scramble.

October 2d—Peak 11,523, above Pine Creek; no cairn; good view of upper Pine Creek amphitheatre. 6th—Bear Creek Spire, by northeast face; among the best of Sierra rock-climbs. 7th—Morgan; a somewhat tedious climb from the south. 24th—Table Mountain (South Fork of Bishop Creek); a good view of Bishop Creek amphitheatre and of Humphreys.

November 7th—Peaks 12,000 and 12,993, southwest of Table Mountain; no cairn on first, bench mark on second. 8th to 30th—Several trips up rounded summits east of Bishop Creek; good views of Bishop Creek and Mount Humphreys region.

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SOME SIERRA ASCENTS IN 1931

CLIMBS BY NELSON NIES, JOHN PEARNE, AND PAUL ROBERTS

August 26th—University Peak. 27th—East Vidette; up north side of the east ridge. 28th—Deerhorn, from Bubbs Creek; climbed the east peak, believing it higher than the west peak; small cairn on summit, no register; climbed on right-hand side of chute to avoid loose rock. 31st—Brewer, from East Lake.

September 1st—Stanford, from Harrison Pass; climbed both south and north peaks; only ten had signed register since Bolton Brown placed it there in 1896. 2d—Unsuccessful attempt on Table Mountain by northeast face. 5th—Williamson, from Tyndall Creek. 8th—Russell, from Whitney Creek; a long talus slope leads nearly to the top, after which a short rock-climb to the left brings one out on the arête midway between the two peaks. 9th—Whitney, by the trail.

CLIMBS BY HOWARD SLOAN

June 11th—Dunderberg, from Trumbull Lake, via Moat Lake and the southwest slope, to a ridge that leads to the summit; descent by the northeast slope. 13th—Excelsior Mountain, from pass at the head of Virginia Creek. 17th—Black Mountain, from Trumbull Lake, via Cooney Lake and northeast slope; followed by climb of Peak 11,429.

July 25th—Whitney and Muir. 26th—Irvine; with Bob Sturdevant and Ernest Lehman; from Mirror Lake to ridge between Mallory and Irvine; fol-

lowed by climb of Mallory, alone. 30th—Agassiz Needle; with Morgan Leonard and Glenn Rickenbaugh; from Glacier Lodge Outpost Camp.

August 2d—Morgan; with Bob Sturdevant; from Little Lakes Valley, in Rock Creek. 10th—Banner, with Jack Peyton.

September 6th—Whitney and Muir. 7th—Russell; with Frank Noel and Bill Murray; from lake at timber-line on Whitney Creek, up the cañon that drains the north side of Whitney; up a slide on south side of Russell, to base of east peak; thence by a ledge leading west across the face of the cliff to top of ridge between the two peaks; climbed both peaks, unable to determine which is the higher; returned by same route. 9th—Tyndall, from the north. 10th—Williamson; with Bill Murray; my fifth 14,000-foot peak in five days.

CLIMBS BY RANGER-NATURALIST CARL SHARSMITH

The following climbs were made under the auspices of the Ranger-Naturalist Service, Yosemite National Park. Excepting where noted, all climbs were guided by Ranger-Naturalist Sharsmith. The numbers refer to the number of persons in the party.

July 18th—Dana, 13. 19th—Cathedral, 7. 23d—Dana, 18. 26th—Lyell, 4. 30th—Dana, 28, with Ranger-Naturalist Borell. 31st—Echo Peaks, with Norman Clyde.

August 1st—Conness, 26, with Norman Clyde. 4th—Unicorn, 13. 5th—Dana, 25, with Park Naturalist Harwell. 6th—Dana, 29, with Ranger-Naturalist Thaxter. 9th—Lyell and Maclure, 6. 11th—Conness, 8. 13th—Dana, 24, with Ranger-Naturalist Burgess. 17th—Echo Peaks, 4. 20th—Dana, 25, with Junior-Naturalist Presnall. 21st—Conness, 2, search for man reported lost. 22d—Conness, 3, by new route. 26th—Dana, 5.

September 10th—Starr King, with Park Naturalist Harwell. 11th—Clark, with Park Naturalist Harwell.

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A MIDWINTER ASCENT OF MOUNT SAN GORGONIO

BY NATHAN C. CLARK

On February 21, 1931, Rodney Lewis and Joseph Harker, students of the University of Southern California, set out with me to climb Mount San Gorgonio. "Grayback," as the mountain is sometimes called in the warm summer months, is the highest summit in southern California, rising 11,485 feet above the sea, and is normally snow-covered throughout the year. We left Los Angeles about 1 A.M., and drove through Forest Home to the end of the auto road in Mill Creek Cañon, starting up the southern trail at 5:30. At that time of year there is plenty of snow, even as low as 6000 feet, and, since the trail was overgrown, we had some difficulty in following it after the first three miles. In fact, we decided to head out over the snow which covered the bushes and small trees, above the 7500-foot elevation, and not even try to follow the obliterated trail.

In mountaineering thought the slope of Grayback is very gentle, but in terms of trying to climb over thoroughly frozen snow and make progress along a new route the mountain is quite steep. The last previous snowfall had been

several weeks before, and the sun had since melted the surface, followed by wind and cold nights which had frozen it; so we were virtually climbing an ice slope, although an inch or two below the surface was soft snow that could provide good footholds. I was carrying my usual photographic apparatus and found my tripod useful in cutting steps. Progress was very slow, and it seemed hours before we were on a level with Wilshire Peak, 9300 feet altitude, just across Mill Creek Cañon. About two o'clock in the afternoon we reached the 10,000-foot level and stopped for lunch. From here on the snow was frozen very solid, and it was with great exertion that we cut footholds and progressed onward toward the top.

Upon reaching the crest of the range, some thousand feet below the summit, on the west side, we found a terrific gale blowing. I observed the angle with which we leaned into the wind, and an approximate calculation indicated a velocity of fifty-five or sixty miles per hour. This gale hurled cutting particles of ice and snow at our faces and into our clothing. At five o'clock we reached what we thought was the top, only to see a higher hummock about a quarter of a mile to the east, and soon from that point saw the real summit and the cairn still farther beyond and higher up. In summer this mountain is very easy of ascent, being a beautiful, but long walk, but in winter, over ice and in a strong frigid blast, this accomplishment is possible only with great perseverance and determination, and at the expense of considerable energy and at great discomfort. We finally stood beside the cairn at 5:30 P.M., and placed a new register book in the Sierra Club box, although the old one was not entirely filled, and consequently not removed. The weather was excellent, and the view from the top was worth the effort. Toward the south we looked across to the snowy crest of Mount San Jacinto, second in altitude only to Mount San Geronimo, and down onto the desert and the Salton Sea, two hundred and seventy feet below sea-level. To the east an endless chain of rough desert mountains, many thousand feet below, disappeared into the hazy horizon. In the north, above and beyond the wooded foothills and the great Mohave Desert, were the clearly defined 14,000-foot peaks of the southern Sierra. A hundred and fifty miles to the west the sunset was reflected in the shimmering surface of the Pacific, with Catalina Island silhouetted against the horizon like some fairy land of ancient folk tales.

Strenuous going and some surprises were in store for us in the descent. The snow, blown about by the wind, had completely filled-in our footholds, and the winter sun having set early, they were frozen over and obliterated, making it necessary to re-cut them. By 6:30 the sky was dark and we were making our way by the light of the clear twinkling stars. At about the ten-thousand-foot level, while progressing around a buttress of the main ridge, Lewis, through not being able to see clearly in the weak light, accidentally stepped on a piece of loose ice instead of into the hole next to it, and in a flash was sliding down over the mountain with nearly the acceleration of gravity. I heard a swish, a yell, and turned to see him disappear over the edge. Harker was not with us then, having gone down while we were at the top, and I was therefore alone. The combination of extreme fatigue, due to the great amount of step-cutting, and the cold of the high midwinter night, and the feeling of responsibility for



THE CAST OF "EXHAUSTUS"
A Tragedy in the Greek Manner, by Ansel E. Adams, as given at Benson Lake, July, 1931
Photograph by Nathan C. Clark



AN EARLY PICTURE OF "SNOW SKATING" IN PLUMAS COUNTY
Union Valley and Pilot Peak
Painted by Henry J. Frey, from the original photograph by S. P. Sanders, about 1865
From Edward Vlachet's Views of California, about 1867

my companion, was almost overpowering, and the knowledge that there were nine miles of frozen snow to descend before we would reach the road was anything but pleasant. However, I soon heard a call not far below, and, upon answering, discovered that Lewis had fortunately slid against a small springy tree-top projecting through the snow. I cut steps down to him, we returned to our original route, and continued on toward the bottom. The way seemed interminable, and, in fact, it was nearly midnight when we finally set foot on the flat frozen sand of the auto road. Then came more trouble—Harker had driven back to Forest Home to get assistance for us, being alarmed at our failure to return by eleven o'clock. Those five miles of tramping under black trees and around endless curves seemed to stretch beyond all limits, but we finally arrived at Forest Home after 1 A.M., and fell into bed, tired and happy.

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AN ASCENT OF PEAK 13,238

BY NATHAN C. CLARK

High in the rugged fastness of the Sierra Nevada there flows a clear stream of icy water through French Creek Cañon. This is a part of the watershed of the South Fork of the San Joaquin River, and is bordered by bare rocky peaks rising twelve and thirteen thousand feet above the sea. On June 23, 1931, Roy Crites and I left our camp below Pilot Knob and walked up French Creek Cañon to Pine Creek Pass, on the main Sierra crest a few miles north of Mount Humphreys. Flanking this unused pass are two tiny lakes, a few feet apart and at the same altitude. One drains into Pine Creek, Owens Valley, and then the desert; the other runs into French Creek, Piute Creek, the San Joaquin River, and finally the Pacific Ocean. At this point the cañon turns abruptly north, going upstream, and takes us into a long high valley, appropriately called "The Valley of Frozen Lakes." On the west side is a vertical wall rising to sharp, rugged peaks. The three highest, from south to north, are Peak 13,067, which we refer to as Isosceles Mountain because of its appearance from the northeast side, Peak 13,238, and Peak 13,234, the numbers being their altitudes as shown on the U. S. Geological Survey topographic map.

Having seen and admired these peaks from nearby mountain tops, and wanting to obtain some photographs of the region, we set out to climb the middle one, Peak 13,238. There is a steep pass between the southerly two, about 12,500 feet elevation, and we decided to ascend by this route and then up the southeast ridge. There was no difficulty; in fact, the climb was mainly a scramble over a large steep talus pile. Our efforts were well repaid by the superb view from the top. This being the highest peak in the neighborhood—higher than the main crest—it afforded a complete unbroken panorama from the Darwin Group and Mount Goddard on the south to the Abbot group on the north, and far off in the dim northwest were Mount Ritter, Banner Peak, and Mount Lyell. The cañons in this region are quite deep and precipitous, and rather complicated, hence the views in all directions are as fine as can be found anywhere in the Sierra. We were surprised to find no cairn or trace of previous ascents, and therefore recorded the date, weather, and route in a

small notebook which we left in a tin can in a pile of rocks at the top. The weather was ideal. Cool clear air, a slight breeze, and the warm radiant heat of the sun provided perfect conditions for photography and appreciation of the supreme majesty of this part of the range. Although the snowfall during the previous winter had been far below normal, we were early enough in the season to find conditions excellent for climbing. I spent about two hours taking photographs and then we descended by the southwest ridge, which is broad and flat, and leads directly into the glacial basin above French Creek Cañon.

The others in our camping party were Dean Philip S. Biegler and Professor Gilbert H. Dunstan, both of the University of Southern California. During this short outing, which ended about a week before the Sierra Club Outing began, we also went up Pilot Knob and an unnamed peak of the Pinnacles Ridge above French Creek Cañon, and Mount Darwin and Mount Goddard in the Evolution region.

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SOME CLIMBS ON THE NORTH PALISADE

BY FRANCIS P. FARQUHAR

The Sierra Club has long neglected the splendid territory lying at the foot of the Palisades on the eastern side. Here, at the head of Big Pine Creek, are fine forests, beautiful lakes, and scenery of a grandeur unsurpassed in any part of the Sierra. Moreover, there are the glaciers of the North Palisade and the Middle Palisade, by far the finest glaciers in the range, yet almost unknown to fame. Although they are shown on the U. S. Geological Survey maps, there is scarcely a mention of them in the publications of the Survey. They remain an almost unexplored field for geologists and students of glacial phenomena.

Above the glaciers stand the steep walls of the Palisades, presenting some of the finest opportunities for the sport of mountain-climbing that the Sierra Nevada affords. Norman Clyde has been very active in this field and has pioneered the routes on both the North and the Middle Palisades. Accounts of his climbs are to be found in *American Alpine Journal*, Vol. I, No. 2, 1930, and Vol. I, No. 3, 1931. The first ascent of North Palisade from the glacier was accomplished September 9, 1928, by Norman Clyde, Bestor Robinson, Oliver Kehrlein, and Oliver Kehrlein, Jr. (*SIERRA CLUB BULLETIN*, 1929, XIV:1, pp. 58-60.)

In August, 1931, a party of nine camped for several days at one of the little lakes near the head of the North Fork of Big Pine Creek. Food and dunnage bags were packed in from Glacier Lodge, a half-day's trip. Three first-class climbs were made. The first, on August 9th, was participated in by the entire party: Norman Clyde and Robert L. M. Underhill, leaders; Bestor Robinson, Lewis F. Clark, Neill C. Wilson, Elmer Collett, Glen Dawson, Jules M. Eichorn, and Francis P. Farquhar. Divided into three ropes, the party climbed from the glacier to the summit of North Palisade and traversed to the second highest peak, which stands close to the summit toward the northwest. The highest point of this second peak is a solitary pillar of granite, which was sur-

mounted by all save three of the party. On August 11th, in spite of heavy rain, an ascent of Temple Crag was made by Underhill, Clyde, Dawson, and Eichorn.

The morning of the 13th began with clear weather, and all save Wilson and Collett started for a climb of the northwest peak of North Palisade, which we subsequently named Thunderbolt Peak. Clouds gathered rapidly, and shortly after the party reached the summit a violent thunder-storm drove all precipitately to a place of safety. So rapidly did the storm gather that Eichorn, last man to leave the ridge, was dangerously close to a lightning flash that appeared to strike the mountain. The importance of immediate retreat as soon as the rocks begin to "sing" was strongly impressed upon the members of the party. After half an hour of huddling on a ledge, in the face of hail and snow, the storm permitted us to return. It was presumed that the descent would be an easy one, but the absence of snow, usually abundant above the bergschrund, made it necessary to rope down from the cliff, chop steps in the ice, and again rope down into the bergschrund. The result was an arrival at camp after dark. These three climbs demonstrated the facility with which even the most formidable mountains of the Sierra can be overcome through the use of proper rope-technique accompanied by sound leadership. It was also demonstrated that the ice-axe is an important implement in making climbs in this region.

BOOK REVIEWS

GEOLOGIC HISTORY OF YOSEMITE VALLEY* Members of the Sierra Club, and particularly those members who have had the opportunity of associating with François E. Matthes during his study of the geology of the Sierra Nevada, will be greatly interested in his monumental work, mentioned in the February, 1931, *SIERRA CLUB BULLETIN*, entitled "Geologic History of the Yosemite Valley," which was recently published by the U. S. Geological Survey as Professional Paper No. 160. Quoting from the excellent technical abstract which precedes the complete work: "The problem of the origin of the Yosemite Valley inherently demands a solution in quantitative terms. Its essence is, To what extent is the valley a product of glacial action, to what extent a product of stream erosion? The principal result of the investigations upon which this report is based is the determination within narrow limits of the preglacial depth of the Yosemite Valley and of other facts concerning its preglacial development which permit fairly definite estimates of the proportionate shares of work performed by stream and by glacier."

In attacking this problem Mr. Matthes has spent many years in painstaking study. Conclusions from these observations show the work of the trained geologist with a profound knowledge of his subject, yet the whole volume is presented in language readable and interesting to the layman not specially trained in geology. Mr. Matthes points out that speculation as to the origin of Yosemite Valley began on the very day of its discovery by white men. He outlines various hypotheses advanced by others, and how John Muir first saw clearly that the glaciers had done much of the excavating. It has remained for Mr. Matthes to make the finished authoritative study in which the various cycles of glaciation and stream erosion are so carefully and convincingly traced. His explorations have necessarily covered the entire basin of Merced River and adjacent areas. In fact, the extent of the area covered affords much information on the geology of Yosemite National Park. The volume is profusely illustrated with views specially chosen to illustrate various geological features. Several colored maps and folding plates add greatly to the clearness of the subject matter. Of special interest is Plate 39 showing in detail a reconstruction of the ancient glaciers of the Wisconsin glaciation.

It is unfortunate that Mr. Matthes has been diverted from the High Sierra to other fields. With his knowledge of the High Sierra and his interest in this field, other studies which would be of very great value should follow covering other parts of the range. It is a pleasure to record that during at least one season Mr. Matthes used the Club's Annual Outing as a base of operation for his field studies. It would be most fortunate if these relations could be con-

* *Geologic History of the Yosemite Valley*. By FRANÇOIS E. MATTHES. United States Department of the Interior, Geological Survey. Professional Paper 160. Government Printing Office, Washington, 1930. Pages, vi+137; illustrations, maps. Paper covers. Price, \$1.10.

tinued. The outing was thereby enriched and scientific work of great value was forwarded.

WALTER L. HUBER

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RAINBOW CANYONS* Among the outstanding contributions of the past year to the literature of the Southwest is that of Eivind T. Scoyen and Frank J. Taylor on the national parks and other scenic attractions of southern Utah—"The Rainbow Canyons," as they have happily titled it. Excepting, perhaps, the brief bulletins of the National Park Service, this is the first offering to the general public dealing specifically with this colorful region. The authors are especially well qualified to present the subject; Mr. Scoyen having been the first permanent superintendent of Zion and Bryce Canyon national parks, while Mr. Taylor, through close association with the national parks for many years, knows how to present nature's scenic offerings in brief, readable, and attractive form. It has been only in very recent years that Zion, Bryce Cañon, Cedar Breaks, Natural Bridges, and the other unusual places of southern Utah have been receiving much attention and attracting visitors. But the stream of sightseers has now set in, accelerated by the automobile roads that now reach these places so recently inaccessible, and by the glowing reports of those who have "gone and seen for themselves." So this book is a very timely offering. Messrs. Scoyen and Taylor have added to the readableness of the book by incorporating with the scenic descriptions such historical data as pertain to the region, as well as character sketches of the outstanding men among the Mormon pioneers who settled there two and three generations ago. Enough space is devoted to the geological formations to give an understanding of the causes of the stupendous and startling sculpturing and of the varied and vivid coloration. Some attention is given to the Grand Cañon of the Colorado, as the region covered by the book borders the north brink of that great gorge. The main theme, however, is the "Land of the Rainbow Canyons" lying farther to the north—that hitherto almost "unknown land" in literature. A unique and attractive feature of the book is the pictorial map on the inside of the covers, which is best described by quoting the title that the map carries, and which runs as follows: "A Cartograph of the Land of the Rainbow Canyons, Zion and Bryce national parks, and of the prismatic plains and tinted cliffs of southern Utah, done in the whimsical vein by Ruth Taylor White."

FRANCIS M. FULTZ

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EARLY TRAVELLERS This excellent volume portrays the genesis of modern mountaineering as a pastime, as a sport, and as a basis for geological and scientific study. The earliest recorded experiences of those courageous men, who braved unknown dangers to seek knowledge and dispel fears concerning the mountain areas now collectively

* *The Rainbow Canyons*. BY EIVIND T. SCOYEN and FRANK J. TAYLOR. Stanford University Press, 1931, Stanford University, California. Pages, ix+105; illustrations. Price, \$2.00.

† *Early Travellers in the Alps*. By G. R. DE BEER. Sidgwick & Jackson, Ltd., London. 1930. Pages, xx+204; illustrations. Price, 10/6.

known as the Alps, are vividly set forth. The author introduces to the present generation of mountain climbers the beginnings of many of the accepted precepts of mountaineering. For example, crampons began as "iron shoes fitted with spikes"; an ice ax was formerly a "stick fitted with a sharp point"; snow blindness was overcome by "wearing a black veil or the objects known as spectacles." The journals of early travelers refer to the Alps as "places of torment," "terrifying mountains," and the abode of dragons, goblins, and similar fearful phenomena. Peaks and passes which are now yearly trod by thousands were the homes of devils and evil spirits, in the estimation of the former dwellers in Switzerland. The gradual overcoming of these ideas is historically recorded by the author.

The period covered by the book is from the earliest recorded reference to Alpine travel, A. D. 1188, down to the end of the Eighteenth Century. An illustrious array of Alpine tourists is portrayed, beginning with Ægidius Tschudi, and coming down to and including that most eminent of early mountain lovers and scientists, Horace Bénédict de Saussure. The prerunners of a long line of distinguished English mountaineers are also met with in the pages of this volume. Sir Edward Unton, "of Wadley, in the Countye of Bercks, knight," preceded Whymper by exactly three hundred years. He roamed the Alps in the years 1563-64, crossed the Brenner and St. Gotthard passes amongst "mountaines mervelous straites in dyvers places." The book is provided with numerous illustrations, chiefly reproductions from early Alpine literature and portraits of early Alpinists. It is well documented and contains a bibliography and maps.

LEE L. STOPPLE

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JAPANESE MOUNTAIN SCENERY* The Sierra Club has received during the past year two beautifully illustrated books on Japanese mountain scenery. First to come was a volume of views, in half-tone reproduction, of the Northern Japanese Alps, presented "To the Sierra Club with the Best Compliments of Nihon Aruko Kwai (The Japan Walking Club)," signed by the president, H. Yamasaki, at Osaka, April 9, 1931. One needs no knowledge of Japanese to enjoy these pictures and to appreciate the excellence both of the photography and of the reproductions. A list of titles, typed in English, has kindly been furnished.

The second book deals with Fujiyama. It is one of a special edition of fifty copies, and was "Presented to the Sierra Club by the Japanese Alpine Club on the Occasion of the Twenty-fifth Anniversary, 1930, as a Token of Esteem and Goodwill." Besides the general views of the mountain in its many aspects, the illustrations are notable for their display of the details of vegetation.

Both books are worthy of more extensive comment than we are able to give at this time. The Sierra Club welcomes these tokens of friendship received from across the seas. It values them, not alone for the testimony they bear to

* *Nippon Alps Daikan* (Grand View of the Whole Northern Japanese Alps). Edited by Mr. Matsujiro Kammuri, Japanese Alpine Club, with photographs taken by him. (Japanese Text.) 1931. 87 illustrations; supplement, 18 pages, with map.

Fujiyama. Published by the Japanese Alpine Club. Tokyo. 1931. 119 pages; 271 pages of illustrations; map.

the beauties of the Japanese landscape, but even more for the assurance they give that in the love of mountains and of other forms of natural beauty there is a bond between the peoples of Japan and of America that will do much toward maintaining a mutual understanding and respect.

FRANCIS P. FARQUHAR

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JAPANESE
ASCENT OF
MT. WHITNEY*

Mr. Shuki Nakamura has published in Japanese an account of the "first Japanese ascent of Mount Whitney." The book, printed in Tokyo, is an attractive little volume with a number of illustrations, including pictures of the author and his companions on the summit. It is in four chapters: First, "To the Foot of the Mountain"; second, "Climbing"; third, "At Summit"; fourth, "Descent." The table of contents indicates a very thorough presentation of the subject. Throughout the book there are references to the spirit of Alpinism, from which we wish we might be able to quote. Mr. Nakamura is writing another book, "The National Parks of the United States," which will doubtless be done with the same thoroughness. It is with great interest that we watch the growth of an international literature relating to our western mountain scenery.

FRANCIS P. FARQUHAR

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CONSERVATION IN THE
DEPARTMENT OF THE
INTERIOR†

One of President Hoover's recent messages to Congress contained a recommendation for the creation of a new Assistant Secretary of the Interior in charge of "conservation." The need for centralized control and supervision of conservation activities is impressed upon anyone who reads this book. It covers in a non-technical yet informative manner such diverse kinds of governmental interests as irrigation, flood control, public lands, oil, natural gas, national parks, Indian affairs, child welfare, administration of our territories, work of the geological survey, etc. Nearly every other page is illustrated. The printing was done by the offset method, which permits the use of rough paper and retains unusually well the feeling of the original photographs, which are well-chosen.

There is nothing to show how the responsibility for the work is divided between the joint authors. Notwithstanding the banalities of some parts of the text, such as, "The Government threw the most massive of its concrete dams across the Rio Grande," and "The Mad Colorado Gnaws at its Banks," the book is well worth reading and is interesting. It covers the conservation aims and problems of the day on the whole adequately and convincingly. These are important to us all.

Club members familiar with the literature of Mount McKinley (20,300

* *The Conquest of Mount Whitney.* By SHUKI NAKAMURA. (Japanese text.) Tokyo, 1931. 5+10+174 pages; 13 pages of illustrations; sketch map.

† *Conservation in the Department of the Interior.* By RAY LYMAN WILBUR and WILLIAM ATHERTON DU PUY. United States Government Printing Office, 1931. 253 pages, 5¼x9¼ inches; many illustrations. For sale by the Superintendent of Documents, Washington, D. C. Price, \$1.00.

feet) will be interested in the statement that it rises higher from its base (about 17,000 feet) than any other mountain. Not even the peaks of the Himalayas are excepted.

E. A. MAYERS

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A NEW CACTUS BOOK* When the present enthusiastic "vogue" in cactus gardens got under way, some two or three years ago, it found its devotees rather poorly supplied with sources of information. Books were especially wanting. True, there was Britton & Rose, a monumental work on the subject from the botanists' standpoint; but besides being technical, it was at a price beyond the ordinary collector's purse, and a complete series is now hard to get as the earlier volumes are out of print. Under such circumstances, it is but natural that reasonably-priced books on the cacti have begun to appear. One that has come to our attention is entitled "Our Native Cacti." The author is Ethel Bailey Higgin. It is a beautiful little book and presents somewhat over one hundred fine halftones from photographs and four beautiful illustrations in color. The reviewer found the book exceedingly readable. While, in the text, the author has not touched on *every* species to be found in the United States, she has very thoughtfully added a complete list of our native forms. The book should be welcomed by all cactus enthusiasts.

FRANCIS M. FULTZ

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ENCYCLOPAEDIA BRITANNICA Members of the Sierra Club, in examining the latest edition of *The Encyclopaedia Britannica*, the fourteenth, will presumably look for the articles on such familiar topics as "Sierra Nevada," "Yosemite," and "Sequoia." If they do, they will be disappointed.

Turning first to "Sierra Nevada," we find, following an article correctly titled on the Spanish range of that name, one on "Sierra Nevada Mountains." In a supposedly scholarly work this redundancy is deplorable. The article itself plainly indicates that its author is quite unfamiliar with the subject he has essayed to treat. Witness the following bill of particulars: The Sierra Nevada, he says, "extends northward 430 m. as part of the boundary between California and Nevada, and ends in southern Oregon where it merges with the Klamath or Siskiyou mountain group." (Correction: The Sierra lies almost entirely in California, and at no point is it part of the boundary of California and Nevada, although it is intersected by the boundary at a point southeast of Lake Tahoe. Moreover, it does not extend to southern Oregon, but is officially defined by the U. S. Geographic Board as "limited on the north by the gap south of Lassen Peak.") The description of the range as it was left after the ice age is puzzling: "A desolate expanse of dazzling white granite and glaring schists." (Where were the black rocks of the Ritter group and the red metamorphic slates which cover extensive areas?) Then we come to: "Their middle slopes set with sombre giant pines and sequoias, and their summits marked by storm-

* *Our Native Cacti*. By ETHEL BAILEY HIGGIN. A. T. De La Mere Company, Inc., New York. Pages, viii+170; illustrations. Price, \$2.50.

scarred dwarf pines." (Exception is taken to the adjectives "sombre" and "dwarf;" they may not be positively incorrect, but they do not bespeak familiarity with these trees.) "Few passes cross the range, Kearsarge and Truckee being the most celebrated." (Strictly speaking there is no "Truckee Pass;" presumably reference is intended to "Donner Pass." Kearsarge Pass, while deserving mention, is certainly no more celebrated than are Carson, Sonora, Tioga, and Mono.) In the list of trees, only three species are distinguished by scientific names, and one of these is misspelled, *Abies "concola."* We are left to guess what is meant by "hemlock spruce, white pine, nut pine and needle pine." (The last is particularly obscure.) "The fauna of the Sierra is characterized by the ubiquitous Douglas red squirrel, the mountain goat and mountain sheep; white-tailed, black-tailed and occasionally mule deer; grizzly, black, cinnamon, and brown bears, now all rare." (The Douglas squirrel can hardly be called "ubiquitous"; there are not, and probably never were, mountain goats in the Sierra Nevada; mountain sheep are exceedingly rare; the principal species of deer in the Sierra is the mule deer, the black-tail are found only in the most northerly part, and there never were any white-tail; the grizzly bear is unquestionably extinct; the black, cinnamon, and brown bears, at least those in the Sierra, are color phases of the same animal, and certainly they are not rare.) "Clarke nut-cracker" should be written "Clark nutcracker."

Some of the errors mentioned above are found in earlier editions of the *Encyclopaedia*, specifically, the eleventh, in the article on "California." We reiterate that their reappearance, with the addition of other errors, is proof that the author knows very little about the Sierra Nevada. In other respects the article is remarkable for what is omitted.

The familiar article on "Yosemite," written by John Muir, which appeared in earlier editions, has been superseded. Here again we find the deplorable "Sierra Nevada mountains." The first thing that challenges our credibility is the phrase: "The mild forest-clad valley-floors where stand the giant sequoias, towering sugar pines, superb yellow pines and stalwart Douglas firs, only 2000 ft. above the sea." (The giant sequoias do not stand on valley-floors, and it would be surprising to find any of the trees mentioned at as low an altitude as 2000 feet.) The history of the Yosemite is most inadequately treated. Congress granted the valley and the Mariposa Grove to the State of California in 1864, not 1865. It is in the description of the flora and fauna, however, that we again discover the author's weakness—the same initials sign the "Sierra Nevada Mountains," and "Yosemite." There are misprints: "Jefferyi," for *Jeffreyi*; and "Psuga," for *Tsuga*. The *foxtail pine* is listed as an inhabitant of the Yosemite region. (Its farthest north in the Sierra is many miles south of the park.) "Willows and dwarf junipers and pines but a few inches high creep close to sheltering ledges and boulders." (We doubt if this description was based upon the personal observation of the author.) "The rare flame-red spike of the beauteous snowplant rises above the meadows of the park like a glowing torch." (In a non-scientific work this might pass under sanction of poetic license. The usual habitat of the snow plant, *Sarcodes sanguinea*, however, is forest floor, not meadow.) "Wolves, mountain lions and grizzly bears

have been almost if not quite, exterminated within the confines of the park." (It is doubtful if there ever were any wolves in the Sierra—the big mountain coyote, frequently mistaken for a wolf, is still abundant; the mountain lions are far from exterminated in Yosemite National Park.) "Clark nutcracker" is here spelled correctly. "The train . . . climbs . . . into the very heart of the calm cool forest at the entrance of the park." (Grim humor for those who disembark at El Portal in mid-summer.)

The article on "Sequoia" is not so replete with error, but it is marred by the repetition of a paragraph and by the absence of specific reference to the Giant Forest and to the other groves in the southern portion of the range. No mention is made of Sequoia National Park.

This criticism of *The Encyclopaedia Britannica* is made lest too much reliance be placed upon it as an authority, and with the hope that in a subsequent edition these particular subjects, at least, will be treated with greater care.

FRANCIS P. FARQUHAR

* *

SCOUT NATURALISTS* This book makes a very interesting story, telling of the work which was accomplished by these scouts in our western parks during the summer of 1930. These scouts, Donald Kelley, Jack Edgemon, and Drew Chick, surely had a wonderful and exciting trip. Their trip was for a period of three months. In this time they covered some 12,000 miles of roads in a Dodge roadster, traveling from one park to another. While at our national parks they had to perform the duties of a regular ranger. This included labeling nature trails, establishing flower gardens, collecting specimens for museums, and assisting in guiding-programs. Altogether it is a very interesting book. To the layman who usually does not know of the work which is done in our parks it is of especial interest. The error of naming a picture Mount Lyell instead of Mount Maclure is easily forgiven, as these mountains might readily be mistaken for one another as they are so close together.

Horace M. Albright, Director of our National Parks, contributes a very fitting introduction.

JULES M. EICHORN

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THE ENCHANTED LAKE† This book appears to be the result of a painstaking effort to provide a comprehensive and accurate gift- and guide-book of the Crater Lake Region. Legends and history of the region are set forth, as well as the theories underlying the origin of its physiographic features. The points of topographic interest—the trees, flowers, etc.—are described in detail. The author is passionately fond of his subject and writes in a rhapsodic key throughout. The full-page illustrations are excellent. There is no map.

E. A. MAYERS

* *Three Scout Naturalists in the National Parks.* By DONALD G. KELLEY, JACK W. EDGEMOND and W. DREW CHICK. Brewer, Warren & Putnam. 1931. Pages, 237; illustrations. Price, \$1.75.

† *The Enchanted Lake.* By STANTON C. LAPHAM. 138 pages, 7x10½ inches. Illustrations. Published by The J. K. Gill Co., Portland, Oregon, and The Statesman Publishing Co., Salem, Oregon.

A BOYS' TRIP TO
MOUNT FAIRWEATHER*

The expedition to Mount Fairweather, on the Alaska coast, undertaken in 1930 by Bradford Washburn and his five companions, is of special interest because of the fact that these college boys proved themselves competent explorers and mountaineers in a territory usually regarded as the domain of ripened and experienced men. That they failed to attain their objective is of secondary importance, excepting perhaps to them. Stormy weather thwarted their plans and imposed unexpected tasks, and within sight of the goal the leader deemed it unwise to proceed and had the courage to order a retreat. Thus Mount Fairweather remained unconquered until the following year, when the American Alpine Club party, Ladd, Carpe, Moore, and Taylor, finally attained the summit.

Bradford Washburn's book, while primarily written for boys as one of the series of Putnam's "Boy's Books by Boys," is a useful contribution to mountaineering literature because of its detailed explanations of procedure and equipment, especially in regard to food. There is an interesting list of daily menus put up in numbered food-bags, which may well be studied by the organizers of other expeditions.

FRANCIS P. FARQUHAR

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GUIDES TO
AMERICAN
MOUNTAINS†

There have recently appeared new editions of climbers' guides to three of the principal mountain regions of North America: the Appalachians, the Colorado Rockies, and the Rocky Mountains of Canada. The first edition of the Appalachian Mountain Club's "White Mountain Guide," was issued in 1907, and, even in its comparatively primitive form, it greatly facilitated travel over the forest paths of the granite-backed mountains of New Hampshire. Since that date successive editions have appeared, each with its improvements in fullness of content and in style of presentation, until now the eighth edition exemplifies very nearly the perfect guide-book. Not that the form should be copied in all its details in making guide-books for other regions, for each territory should have its own individual treatment; but as an example of the careful adaptation of style to requirements the Appalachian book is worthy of study and emulation.

The Colorado guide is designed for a different purpose: it emphasizes the varied and picturesque history of the major peaks, particularly those exceeding fourteen thousand feet in altitude. Mr. Hart has made some additions to his first edition of "Fourteen Thousand Feet," published in 1925. The list now

* *Bradford on Mount Fairweather*. By BRADFORD WASHBURN. G. P. Putnam's Sons, New York. 1930. ix+127 pages; illustrations. Price, \$1.75.

† *The A. M. C. White Mountain Guide*. A guide to paths in the White Mountains and adjacent regions. Eighth edition. The Appalachian Mountain Club. Boston. 1931. xii+540 pages; maps. Price, \$3.00.

Fourteen Thousand Feet. A history of the naming and early ascents of the high Colorado peaks. Second edition. By JOHN L. JEROME HART [and] *A Climber's Guide to the High Colorado Peaks*. By ELMOR EFFREY KINGREY. The Colorado Mountain Club, Denver. 1931. 71 pages; illustrations; paper covers. Price, \$1.00.

A Climber's Guide to the Rocky Mountains of Canada. By HOWARD PALMER and J. MONROE THORNTON. Second edition. Printed for The American Alpine Club by The John C. Winston Company, Philadelphia. 1930. xvii+244 pages; map. Price, \$3.25. (Address: American Alpine Club, 544 West 110th Street, New York City.)

includes fifty-one Colorado peaks in this category, to which we may add the thirteen in California and the one in Washington to make a total of sixty-five in the United States, exclusive of Alaska. The "guide" portion of the pamphlet, compiled by Elinor Eppich Kingery, gives very brief, but presumably adequate directions for climbing the fourteen-thousand-foot peaks. The essential thing appears to be to know how to reach the base of the mountain; the climbing, save in a few instances, seems to be merely a matter of judging time and strength. The Colorado Mountain Club has, in this publication, a fine start toward a more comprehensive and detailed guide to the entire mountain region of the state.

The second edition of the American Alpine Club's guide to the Canadian Rockies is a highly finished piece of work, revised and expanded from the edition published in 1921. The form leaves little to be desired and the content is set forth with admirable precision and economy of style. It is addressed primarily to the skilled mountaineer, and is designed to give him reliable information about routes upon the faces and ridges of the peaks. More than six hundred peaks are thus presented. The first ascents and other historical incidents are briefly mentioned and references are given to publications for further information. Climbers in the Canadian Rockies for generations to come will have reason to be grateful to Mr. Palmer and to Dr. Thorington for the prodigious efforts they have made in jointly preparing the first and second editions of this excellent guide-book.

FRANCIS P. FARQUHAR

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OTHER BOOKS RECEIVED

Edward W. D. Holway: A Pioneer of the Canadian Alps. By HOWARD PALMER. The University of Minnesota Press, Minneapolis. 1931. xiii+81 pages; illustrations. Price, \$1.50.

A fine tribute from one mountaineer to another. The extraordinary activity of the late Mr. Holway in his mature years should be an inspiration to every climber of mountains.

Route of the Manly Party of 1849-50 in Leaving Death Valley for the Coast. By JOHN E. WOLFF. [Privately printed, Los Angeles, 1931.] 29 pages; illustrations.

A careful detailed study, made on the premises, of a route of historic interest.

A Dictionary of Greek and Latin Combining Forms Used in Zoological Names. By EDMUND C. JAGER. Second edition. Charles C. Thomas, Publisher, Springfield, Illinois. viii+157 pages. Price, \$1.50.

Especially useful for writers on scientific subjects and for students. Explains over 2000 names.

The Grand Coulee. By J. HARLEN BRETZ. *American Geographical Society Special Publication No. 15.* Edited by G. M. WRIGLEY. American Geographical Society, New York. 1932. x+89 pages; illustrations; map.

An admirable presentation of a geographical subject. The illustrations are notable for their descriptive quality, especially the views taken from the air. The Grand Coulee is a cañon, fifty miles long and nearly a thousand feet deep, on the Columbia Plateau in Washington.

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